

# The Guns of the Regiment

The Weapons of the  
Royal Regiment of Canadian Artillery  
1871 – 2017



1855 - Formation of the Militia Artillery (7 Batteries)

Mostly equipped with 6-pounder bronze smoothbore guns



## Before the Formation of the Regiment

1865 - The British donate ten batteries of guns to Canada. Each battery consists of three 9-pounder bronze guns and one 24-pounder bronze howitzer.

1867 - Confederation (Ontario, Québec, NB, NS).

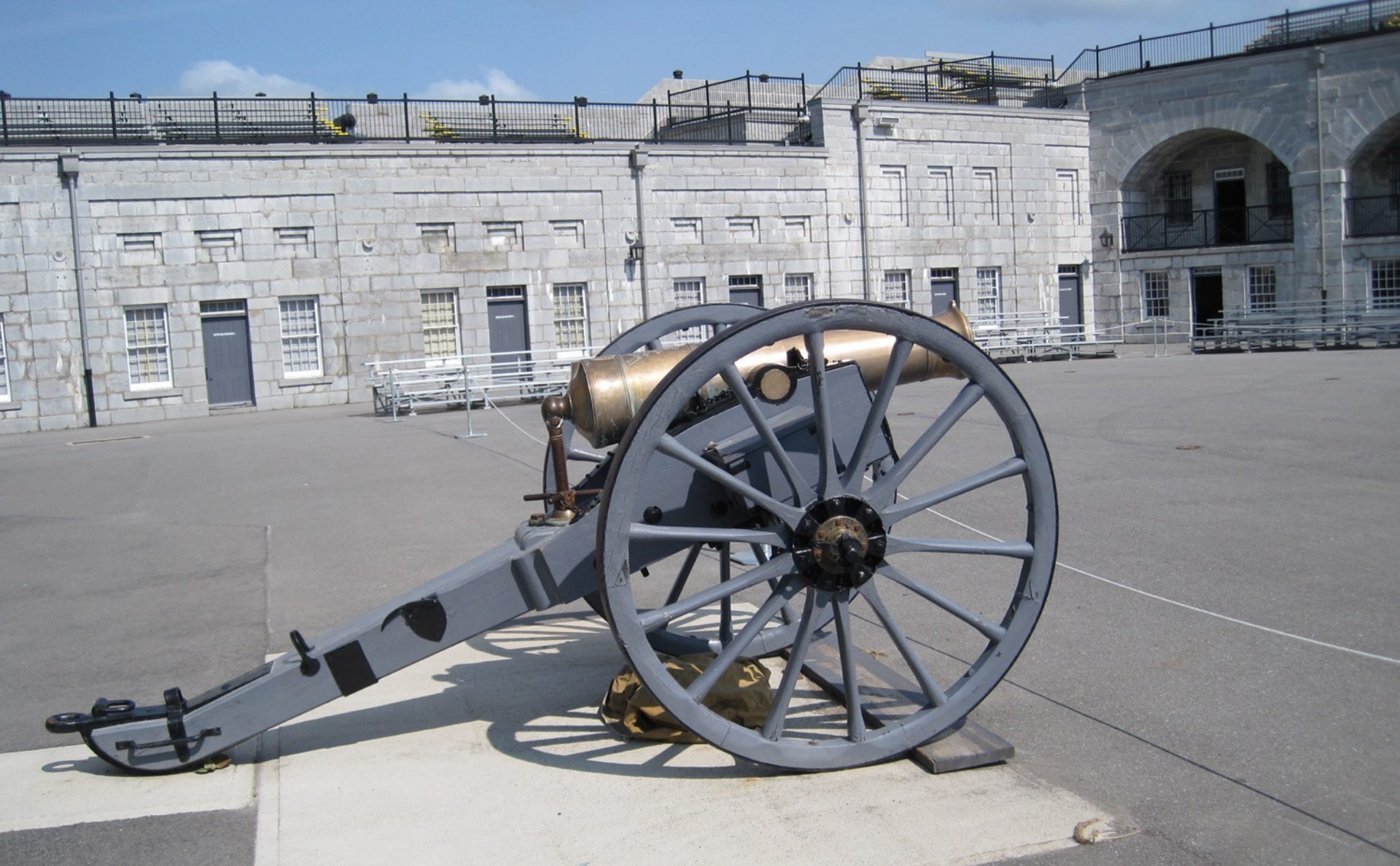
1870 - The British Army leaves Canada, except for Halifax (and later Esquimalt), which remains British fortresses until 1905.

1871 - Formation of the two schools of artillery at Québec and Kingston, and “A” and “B” Batteries.



1871 - The Beginning (Part 1)  
9-pounder 13½-cwt Bronze Smoothbore Gun





1871 - The Beginning (Part 2)

24-pounder 13-cwt Bronze Smoothbore Howitzer





## Supporting the Guns - The Travelling Forge

Each battery included artisans: blacksmiths, farriers, saddlers, and wheelers

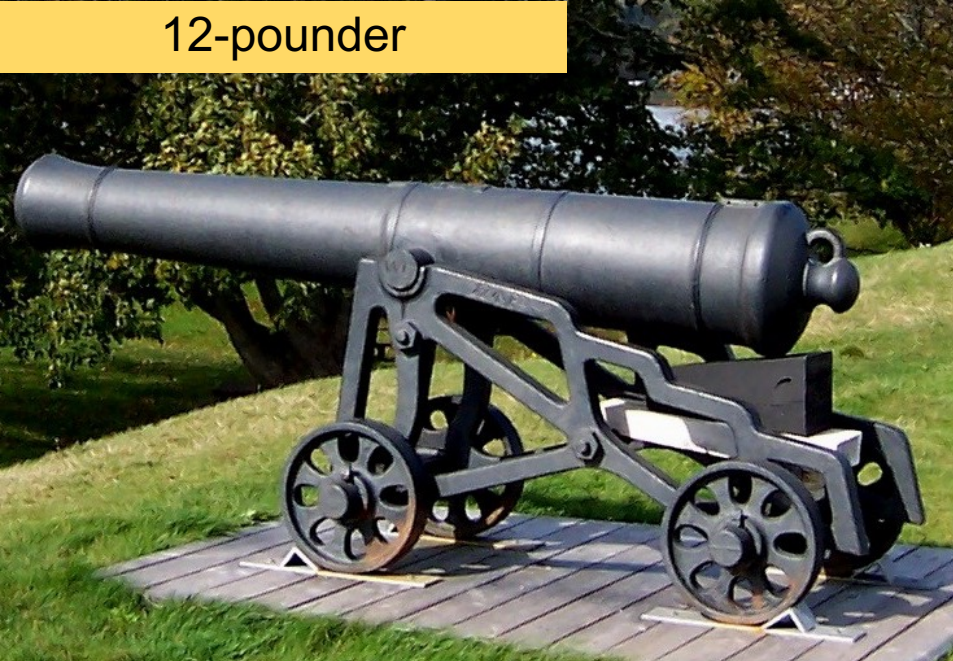




In 1871, there were 30 batteries of Canadian Garrison Artillery (not including Halifax)  
In 1878, there were approximately 895 guns in Regimental service.



12-pounder



18-pounder



Smoothbore Garrison Guns ranged from 12 to 56-pounders



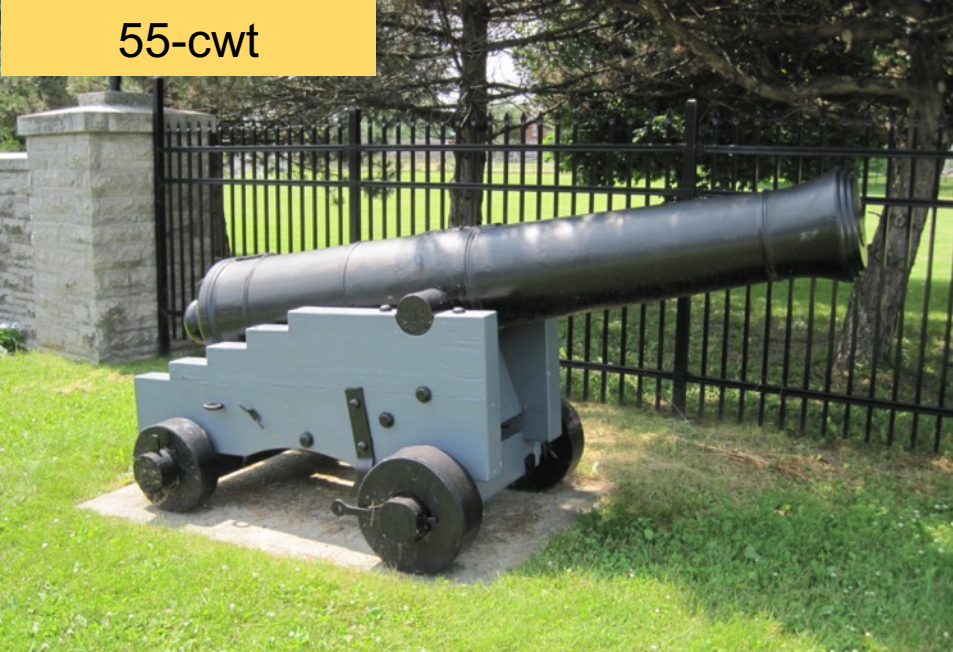
32-pounder



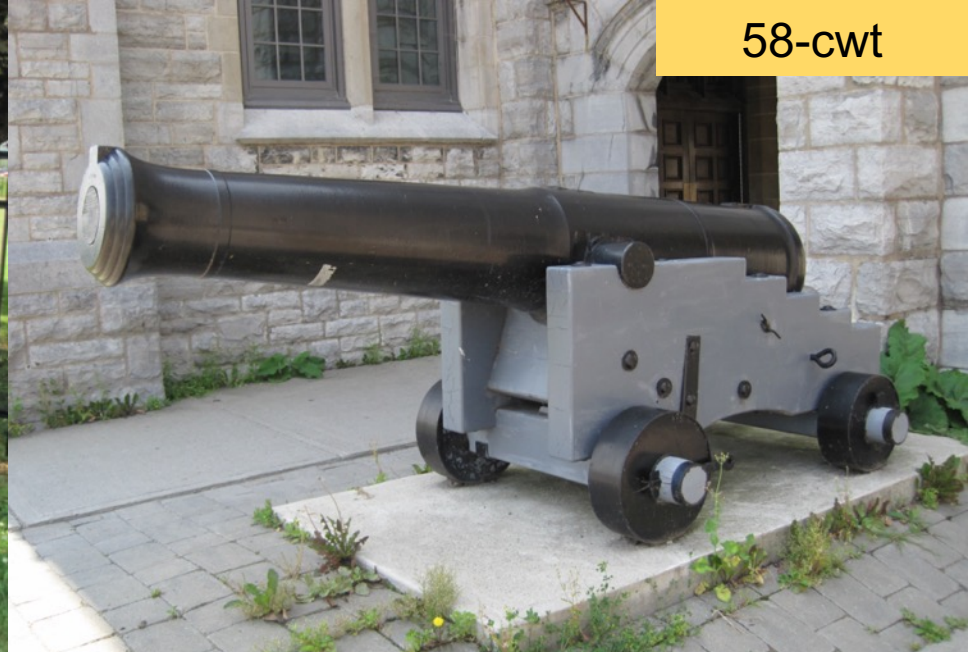
24-pounder



55-cwt



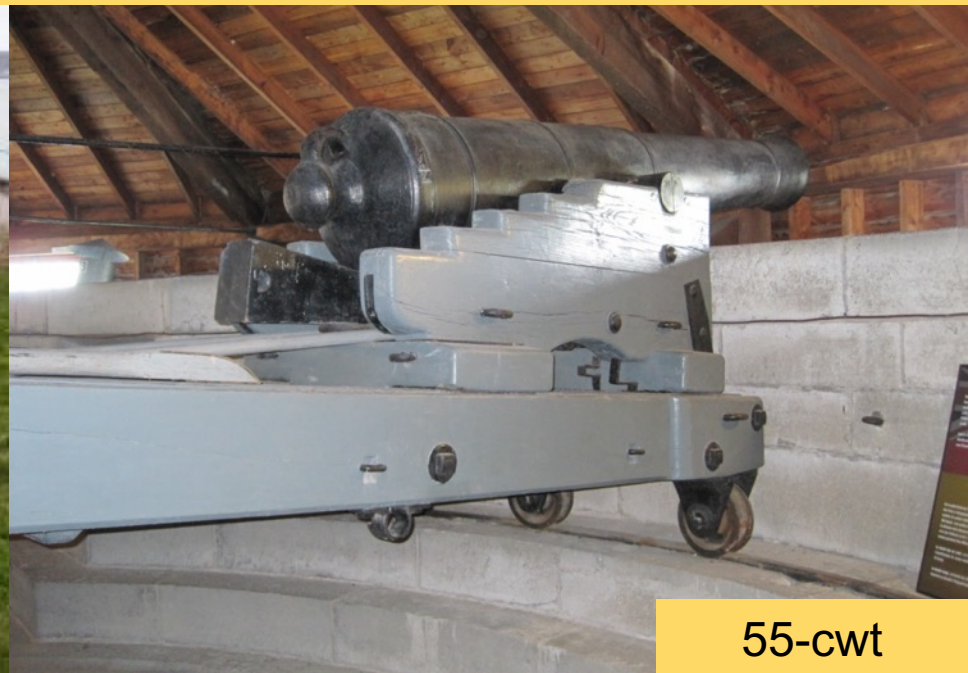
58-cwt



Each calibre of smoothbores had variants. These are 32-pounders



45-cwt



55-cwt



18-pounder carronade



24-pounder carronade



Smoothbore carronades covered moats and were mounted in Martello towers



64-pounder carronade



32-pounder carronade



8-inch 9-cwt Mortar



10-inch 16-cwt Mortar



Major garrisons included smoothbore mortars



Light Cast Iron Mortar



13-inch 36-cwt Mortar

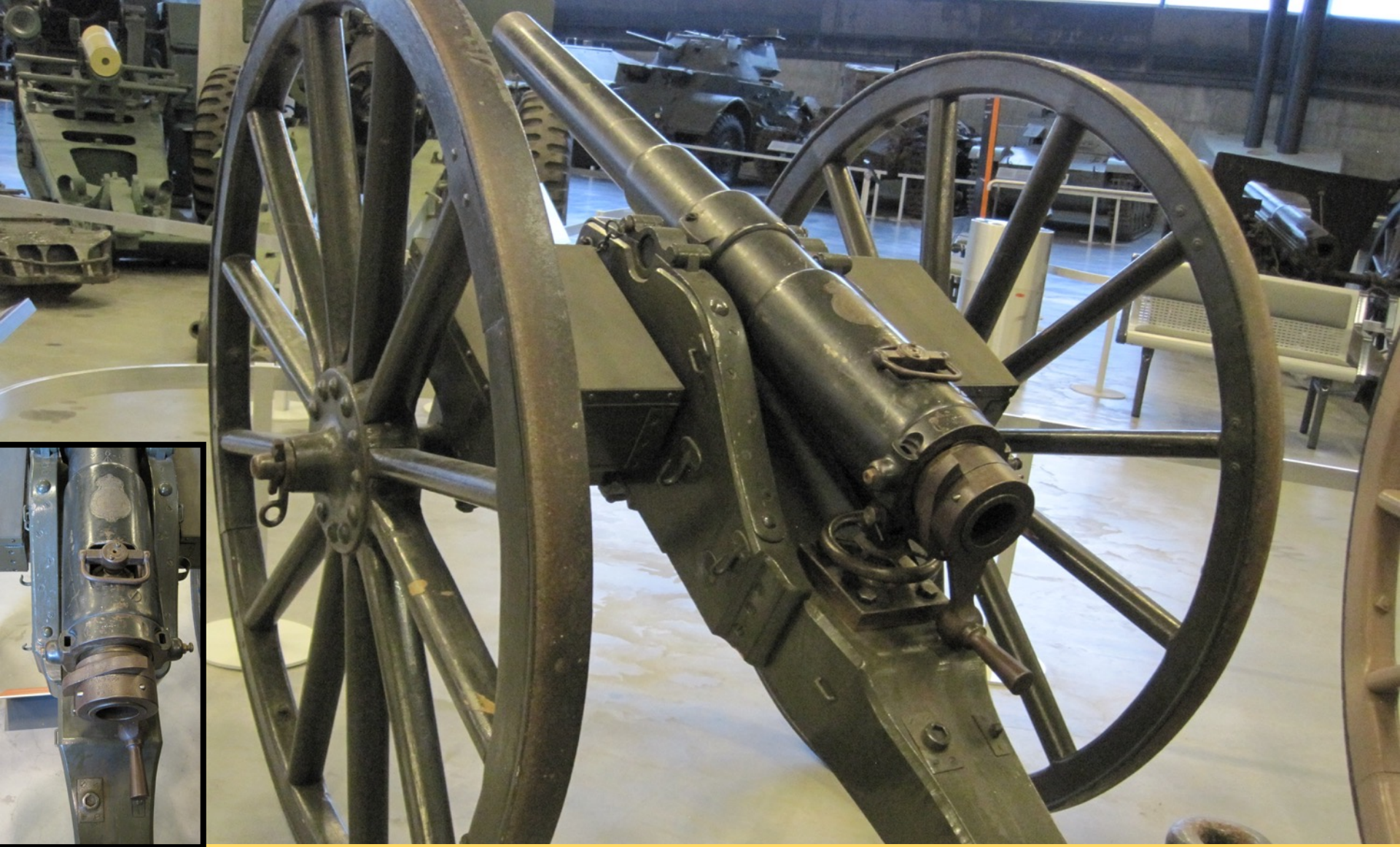


After the Crimean War, Sir William Armstrong designed a rifled breech-loading gun. More than 3,400 guns were manufactured between 1859 and 1862 for the Royal Artillery and the Royal Navy.

A lack of professionalism in the Royal Artillery resulted in the guns being replaced by muzzleloading rifles in the late 1860s.

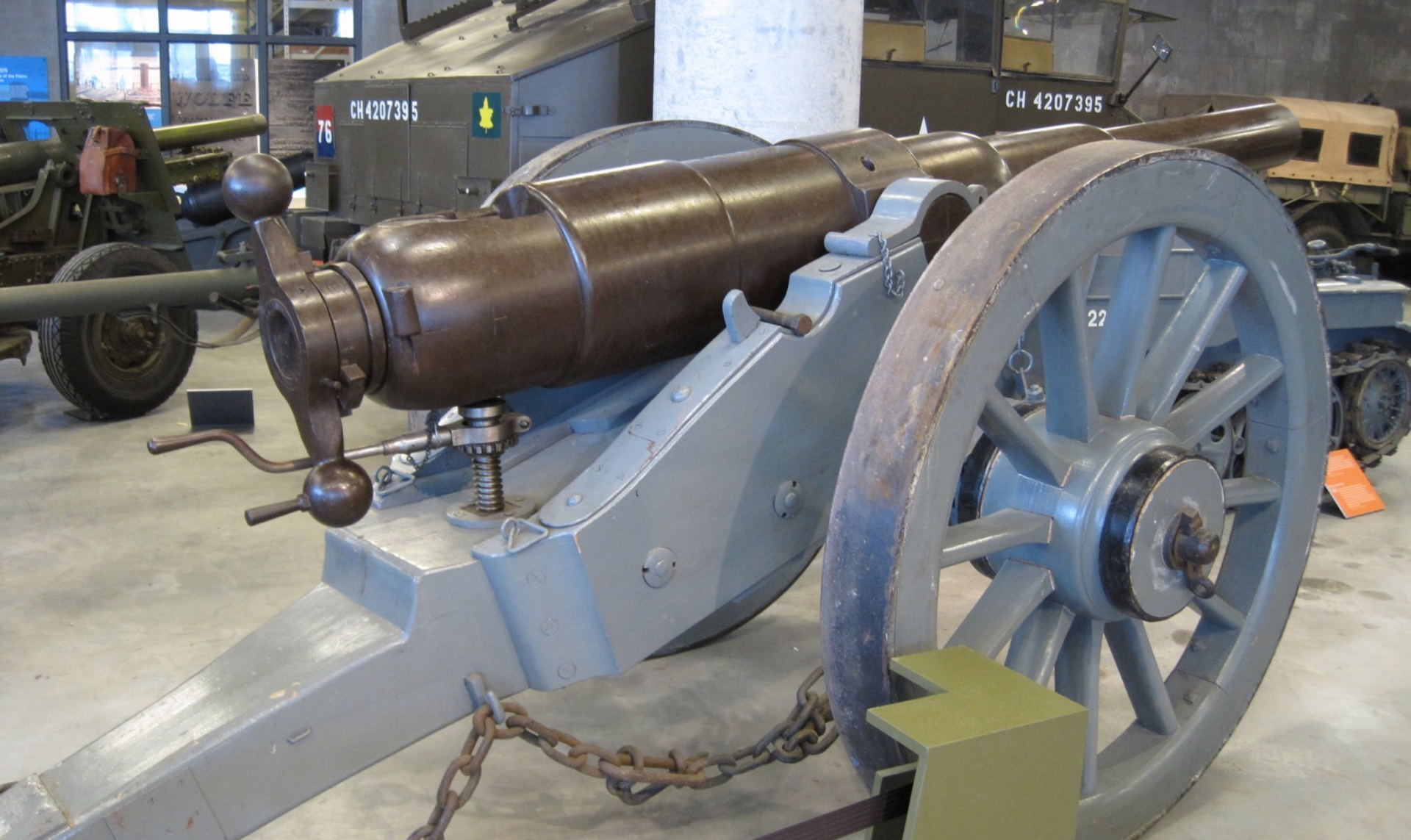
Nevertheless, Armstrong's rifled breech-loaders made their way to the British colonies, including Canada. Five calibres of RBLs served in Canada, in small numbers.





In 1871, the Halifax Field Battery had six 6-pounder 3-cwt  
Armstrong Rifled Breech-loading Guns





In 1882, 40-pounder Armstrong Breech-loading Guns were added to major garrisons as “movable armament” (guns manned by the garrison artillery, which could be moved to counter an attack).





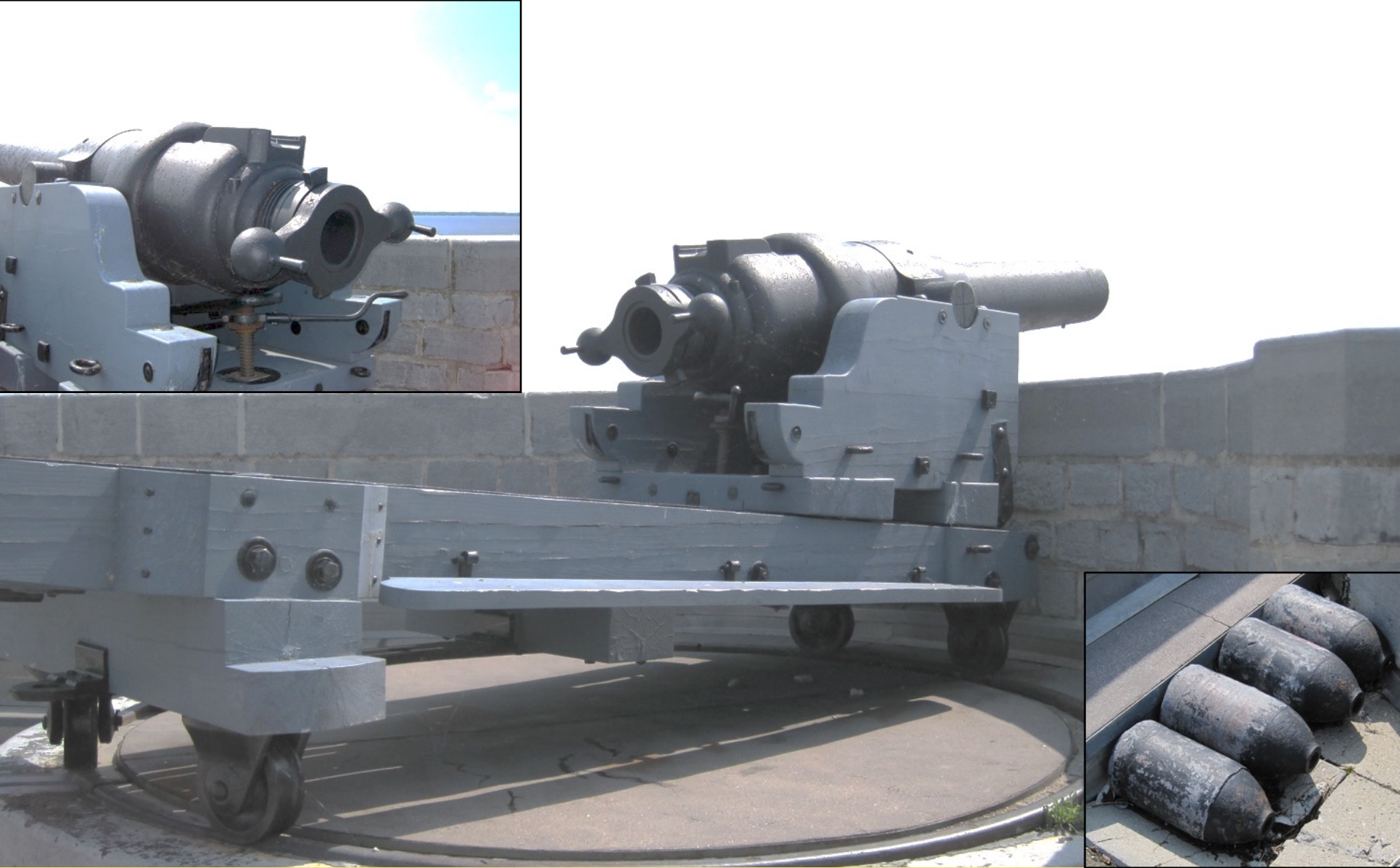
Late 1800s - More Movable Armament  
12-pounder 8-cwt Armstrong Rifled Breech-loading Gun and Limber





The 20-pounder 16-cwt Rifled Breech-loading Gun was used in  
Halifax





There were ten 7-inch 72-cwt Armstrong Rifled Breech-loading Guns (eight at Québec and Lévis, and two at Fort Henry)



In 1873, the Canadian Government began re-equipping the Regiment's field batteries with 9-pounder muzzleloading rifles

By 1878, there were sixteen field batteries and sixty 9-pounder guns in Canada.

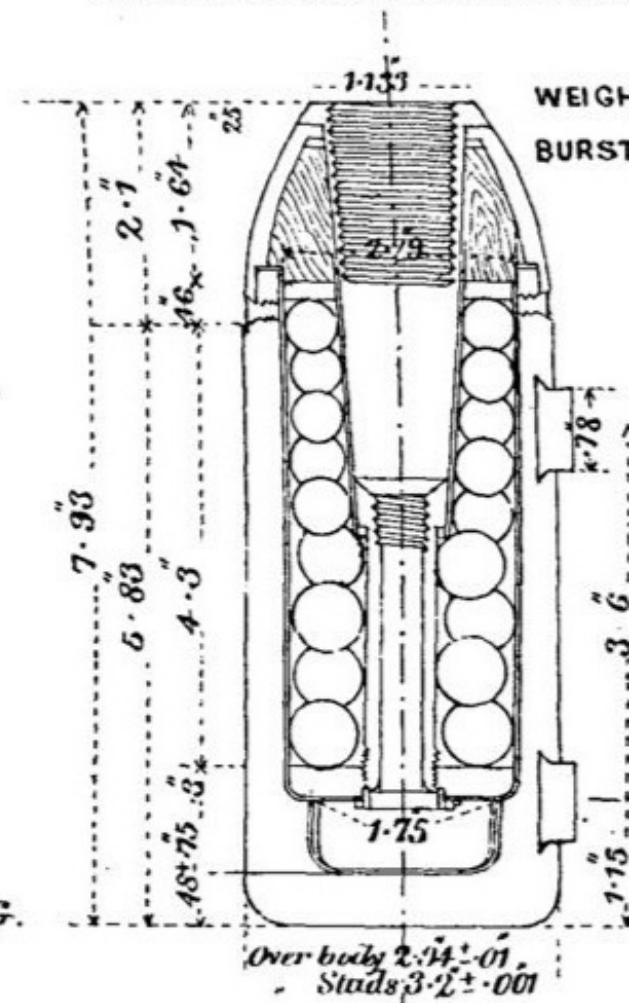
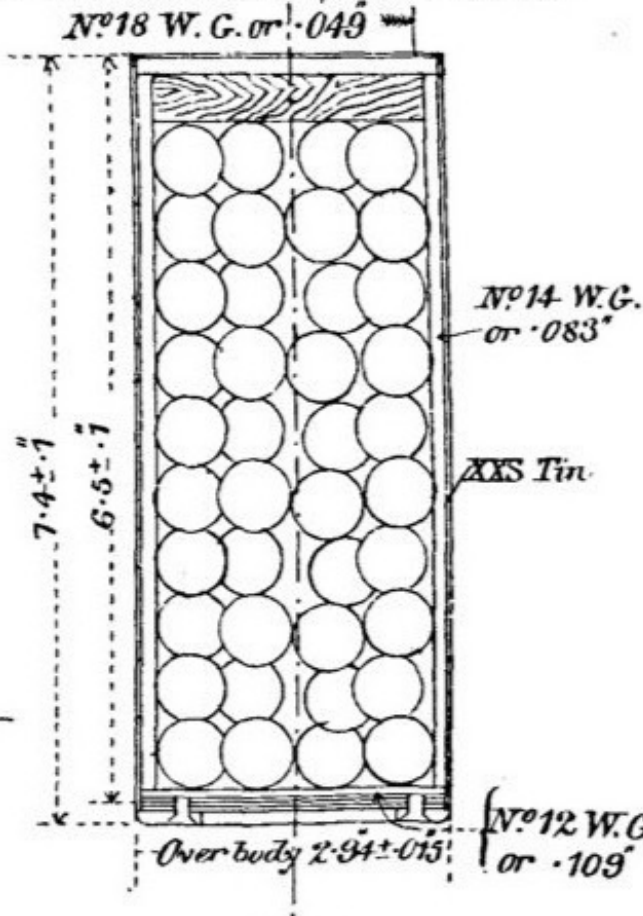




Starting in 1873, the Regiment was re-equipped with the 9-pounder 8-cwt Muzzleloading Rifle. Each battery had four guns.

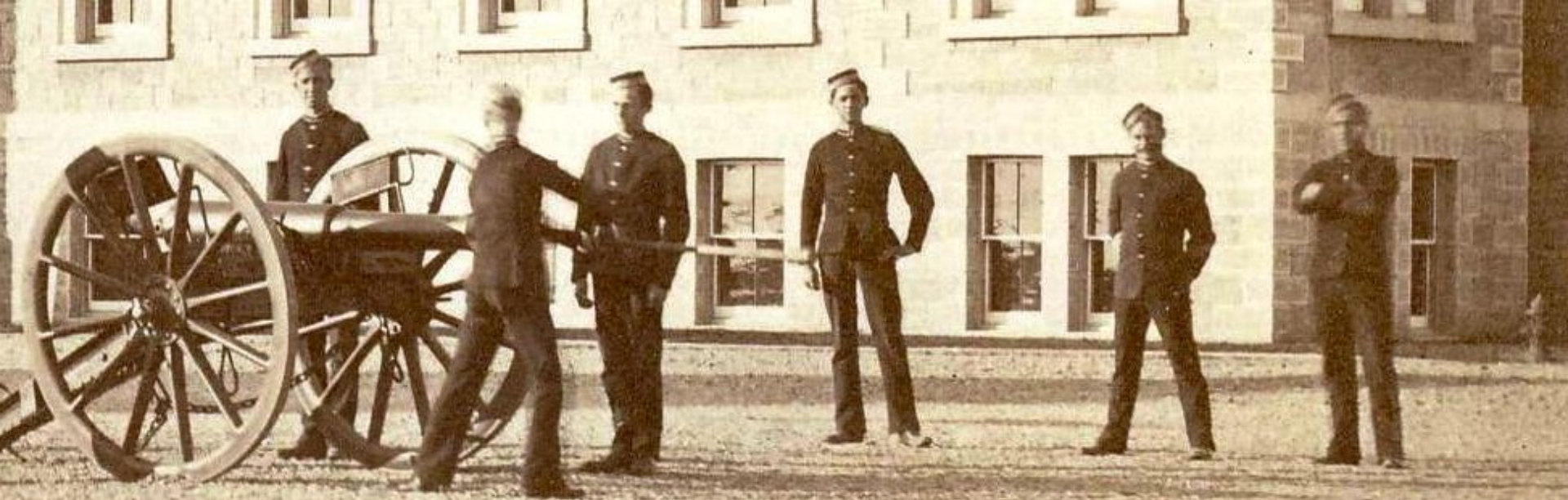


SHELL. R.M.L. SHRAPNEL

WEIGH  
BURST

The 9-pr fired explosive, case, and shrapnel ammunition to a maximum range of approximately 4,000 yards (250 yards with case). Each projectile (except the case shot) had studs that fitted into the rifling in the barrel.





The 9-pounder  
RML at RMC and  
in the field in  
Québec





The Regiment used the 9-pounder Muzzleloading Rifle during  
the 1885 Rebellion

“A” Battery at Fish Creek, 24 April 1885





During the rebellion, "B" Battery also used 7-pounder 3-cwt Rifled Muzzleloading Guns owned by the Northwest Mounted Police



# The Guns at Halifax and Esquimalt

The British retained Halifax as an Imperial Fortress in 1870, and paid for the armament and garrison of the port until 1905.

Later, a similar agreement was in place at Esquimalt, BC.

The fortresses were armed with the latest British artillery. Those guns joined the Regiment in 1905.

The Canadian Garrison Artillery occasionally trained with the Royal Artillery at Halifax.





64-pr 64-cwt Muzzleloading Rifle used on the west coast





# 7-inch 7-ton Muzzleloading Rifle on Traversing Carriage at Halifax





9-inch 12-ton Muzzleloading Rifle at Québec





9-inch 12-ton Muzzleloading Rifles  
as found and restored by the Fleet Diving Unit, Halifax





10-inch 18-ton Muzzleloading Rifle at Halifax



## The Palliser Conversions

The adoption of rifling made all the smoothbore guns in the British Army obsolete. Replacement was a major expense.

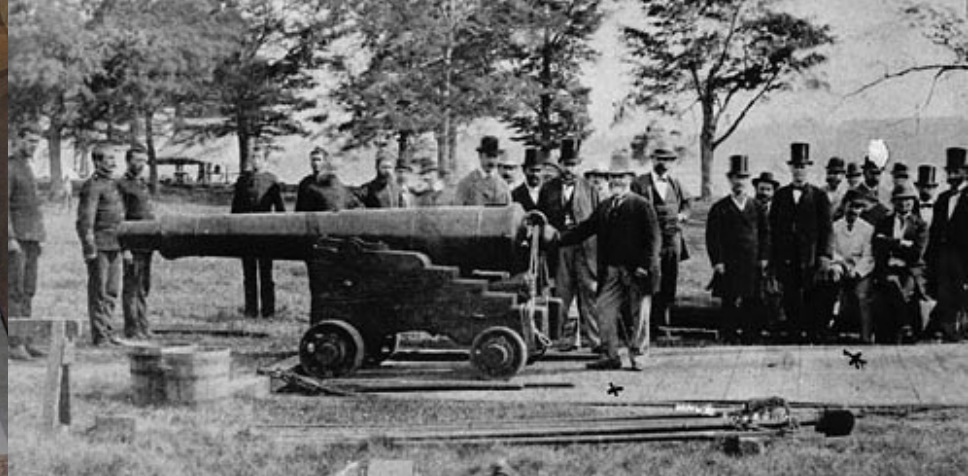
Following a procedure developed by Sir William Palliser, some smoothbore guns were converted to rifled muzzleloaders by re-boring the barrel and inserting a wrought-iron rifled liner.

In addition to some guns purchased from the British, starting in 1878, ten 32-pounder 54-cwt guns were converted to rifling by E.E. Gilbert and Sons, Ltd., Canada Engine Works in Montréal.

This was the first instance of the modification of heavy artillery in Canada.



# The Gilbert 32-64-pounder Converted Rifled Muzzleloading Gun







Sir William Palliser donated two 80-pounder 5-ton  
Converted Rifled Muzzleloading Guns to Canada



## 1895 - Breechloading Returns

Muzzleloading was not suitable for large guns. The recoil had to get the muzzle inside the parapet for reloading.

In 1880, the British finally decided to use breech-loading guns. After experimentation and development, the new breech-loaders used a screw breech, and De Bange obturation invented in France.

Canada ordered new British breech-loading guns in 1895; they started arriving in 1897.

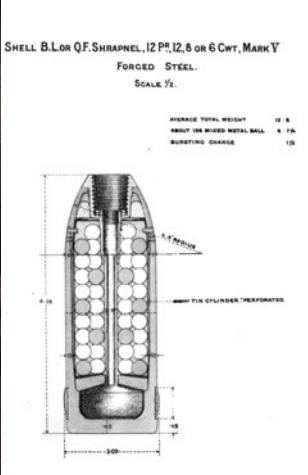






The 12-pounder 6-cwt Breech-loading Gun became the standard Canadian field gun





**Leliefontein**

**The Battle of Leliefontein**

To allow retreating British troops time to escape, Canadian troops fought a delaying action against overwhelming Boer forces.

The Canadians kept the Boers at bay in a fierce hand-to-hand struggle. Laying down the machine gun, the British soldiers continued to fight to save the day. These men were of the Royal Canadian Dragoons, Lieutenant E.J. McLeod and Lieutenant M.J. J. Gendron, and Captain and Lieutenant Gendron during this single, dramatic battle.

1899 – the Regiment takes eighteen 12-pounder 6-cwt Breech-loading Field Guns to South Africa





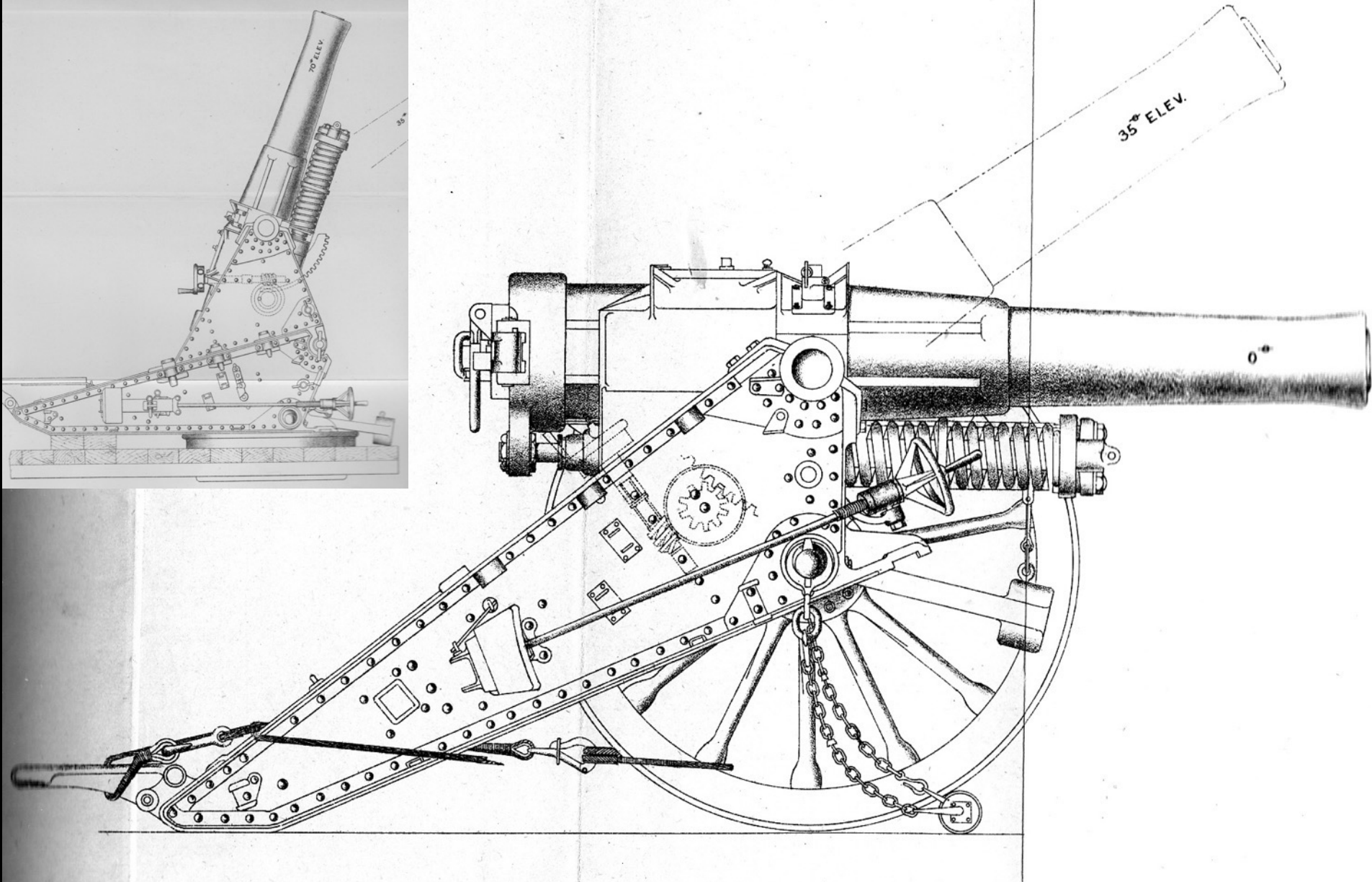
1897 – The two Guelph batteries are equipped with the 5-inch 9-cwt Breech-loading Howitzer





1905 – the heavy artillery received the 4.7-inch 22-cwt gun. It had no on-carriage traverse – the rope is to help lay the gun.

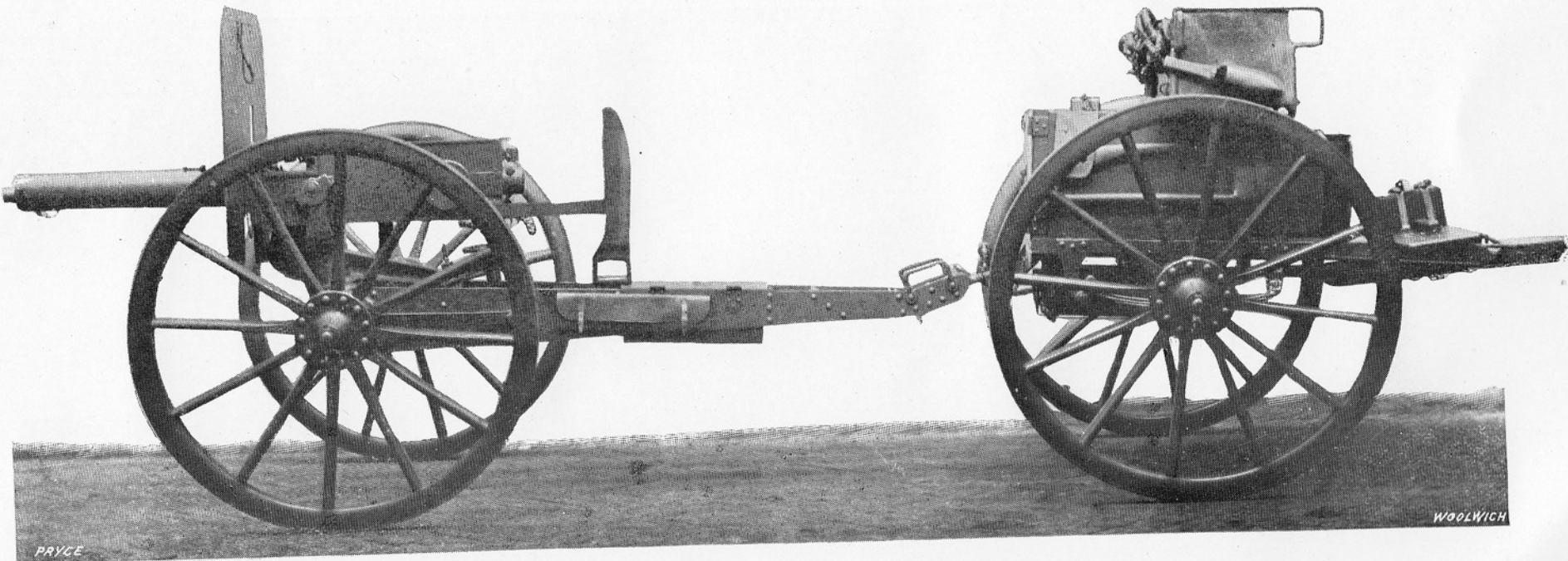




Canada also bought two 6-inch 30-cwt Howitzers



CARRIAGE AND LIMBER, Q.F., 1-PR., MARK I.



1-pounder Maxim Quick Firing Gun.  
Canada procured eight of these after the Boer War, but they were rarely used.





In 1905, twelve 15-pounder field guns joined the Regiment as movable armament at Halifax. It was an upgraded 12-pr 6-cwt gun.

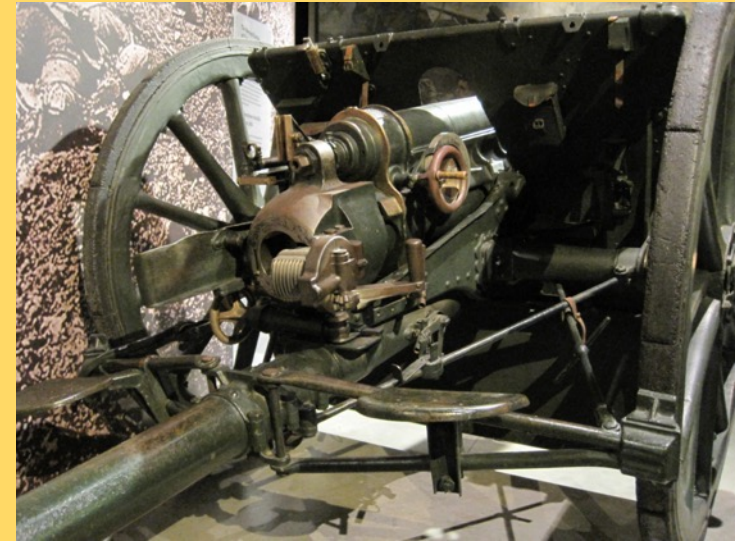


# 1903 - The New Breed

In response to the Boer War, the British developed the 13-pounder and 18-pounder Field Guns, and the 4.5-inch Howitzer

These were modern QF guns with shields and hydro-spring recoil mechanisms

Our first order was in 1903 – deliveries started in 1907

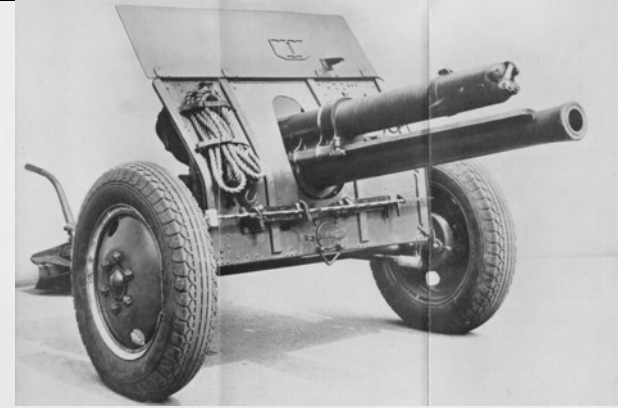
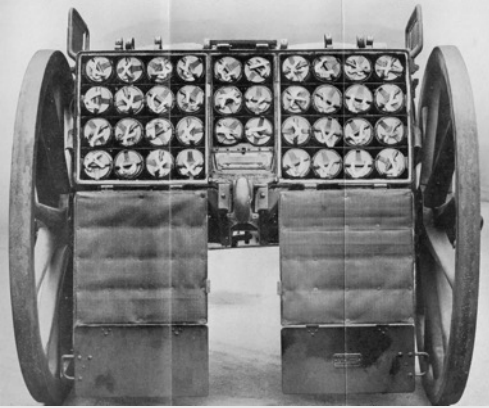






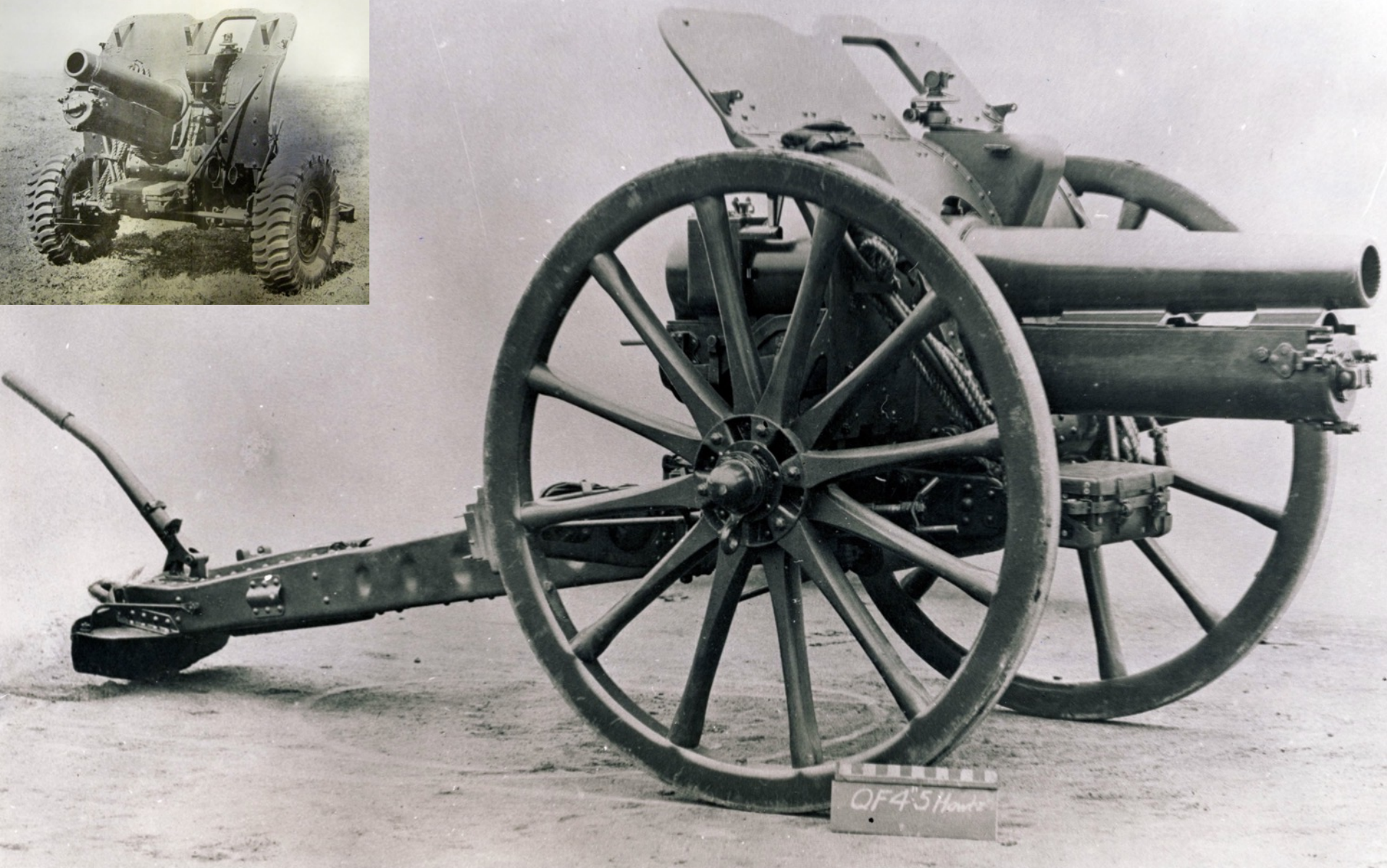
1908 – the 13-pounder Field Gun. This equipped “A” and “B” Batteries and four Militia batteries.





1908 - 18-pounder Field Gun. This became our standard field gun until 1939. Most were converted to pneumatic tires in 1937.





1914 - 4.5-inch Howitzer. This was the companion weapon to the 18-pounder field gun until the Second World War.





60-pounder Mk I Field Gun



# The First World War

In 1914, the Regiment could field:

24 - 13-pounder field guns

136 - 18-pounder field guns (with more on order)

54 - 4.5-inch howitzers (on order)

16 - 4.7-inch guns

12 - 60-pounder guns





# First World War Divisional Artillery

In 1914 a division had:

- Three field brigades, each with three six-gun 18-pr batteries (54 guns) plus an ammunition column

- One howitzer brigade with three 4.5-inch howitzer batteries (18 guns) plus an ammunition column

- One heavy battery (four 60-pounders)

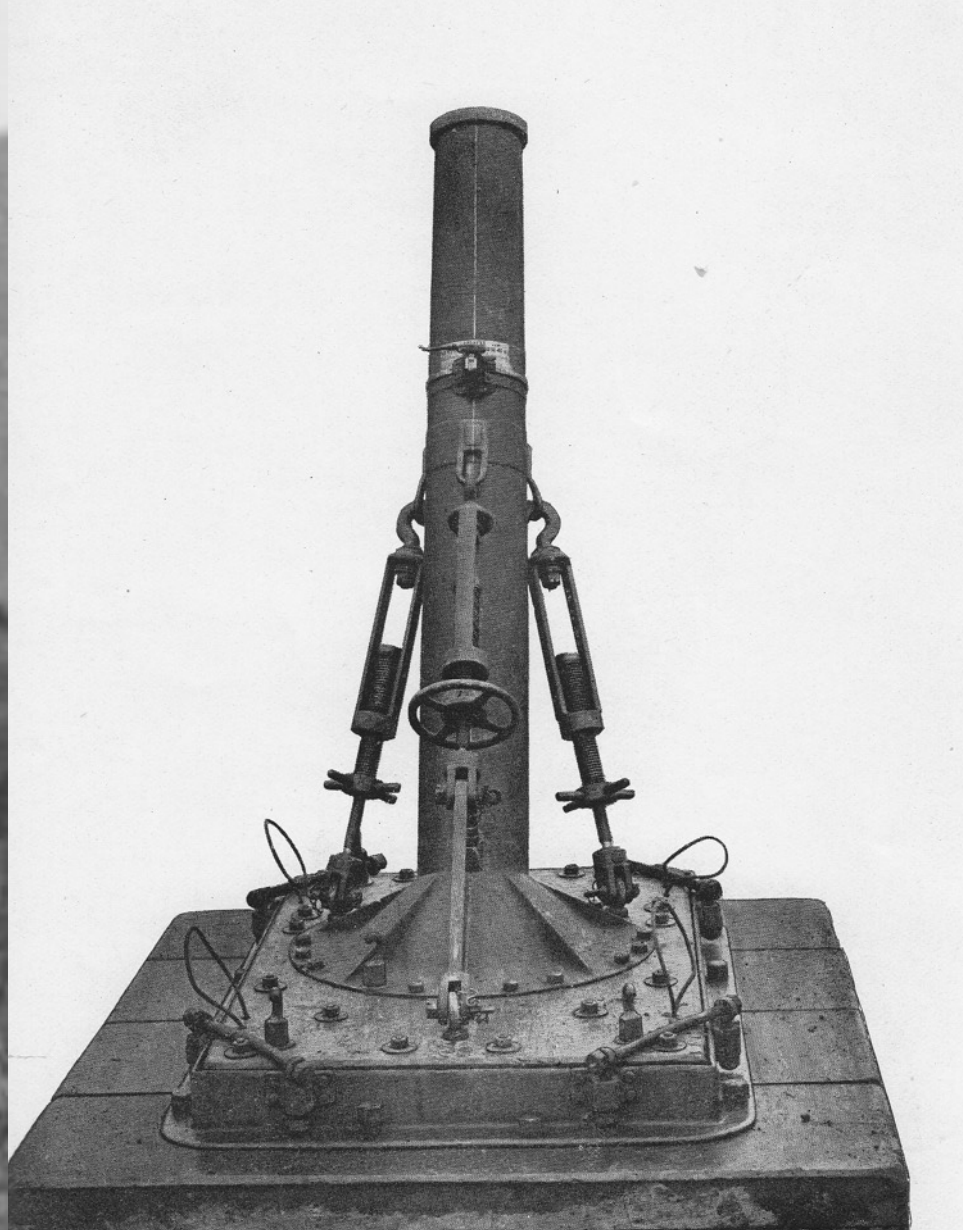
By 1918, we had five divisional artilleries, each with:

- Three mixed brigades, each with three six-gun batteries of six 18-pounders and one battery of six 4.5-inch howitzers

- Two batteries of six 6-inch trench mortars

- One battery of six 9.45-inch trench mortars





2-inch "Toffee Apple" Mortar

6-inch Newton Mortar

The Medium Mortars





9.45-inch Trench Mortar



# Canadian Corps Artillery

The Canadian Corps Artillery was formed in 1916  
with eventually three brigades totalling:

- Two heavy batteries (60-pounder guns)

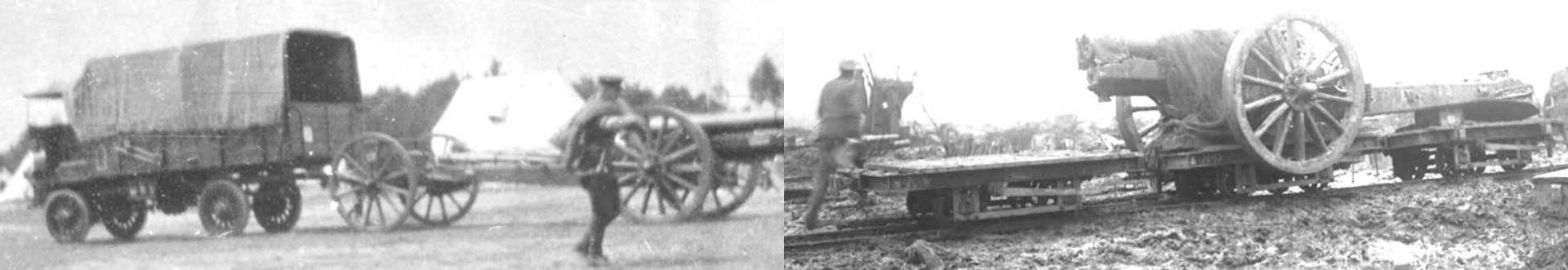
- Eight siege batteries (6-inch howitzers)

- Two siege batteries (8-inch howitzers)

- Two siege batteries (9.2-inch howitzers)

Fifth Division Artillery





6-inch 26-cwt Howitzer





8-inch Mk VIII Howitzer





9.2-inch Howitzer



Repairing the guns – the Corps  
had two light and one medium  
workshops



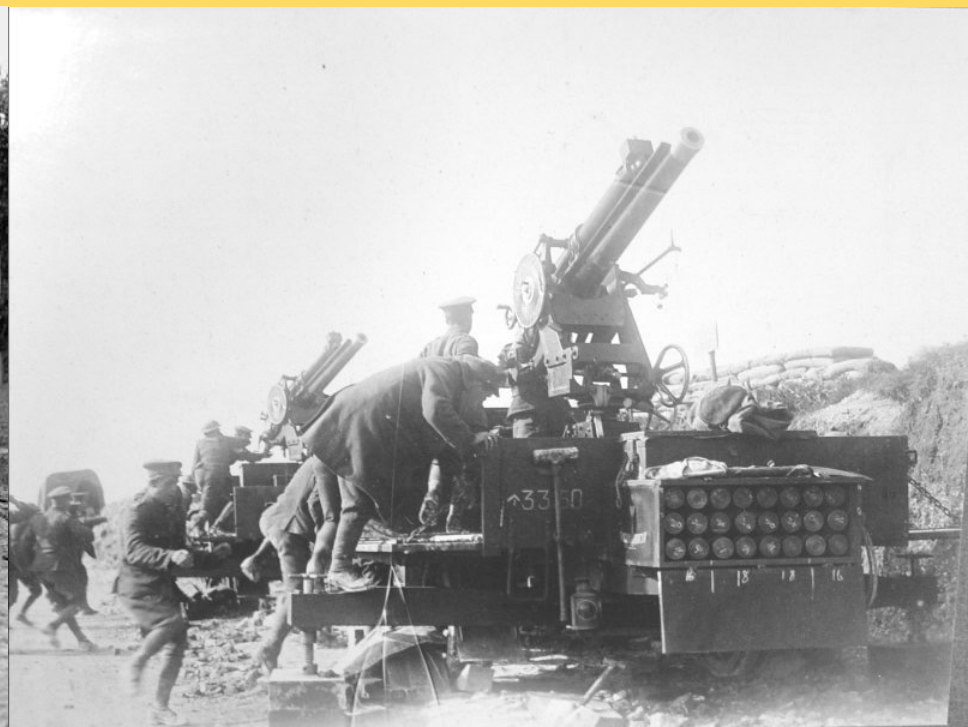


Maintaining the Guns  
First World War – SSgt A. E. Davis

# The Independents

The RCHA Brigade (attached to the Canadian Cavalry Brigade) used 13-pounder field guns

“E” Anti-aircraft Battery (attached to the British) used 13-pounder 9-cwt anti-aircraft guns





## Between the Wars, the Regiment had:

45 - 18-pounder Mk I guns

208 - 18-pounder Mk II guns

76 - 4.5-inch howitzers

8 - 60-pounder Mk I guns

4 - 60-pounder Mk II guns

17 - 6-inch 26-cwt howitzers and 3 spare barrels

4 - 8-inch Mk VIII howitzers

60 - 6-inch Newton mortars (in storage)

plus

Coast Defence and Anti-aircraft Guns

# Mechanization

The mechanization of the Permanent Force began about 1930

200 18-pounders were converted to pneumatic tires in 1937

4.5-inch howitzers were converted to pneumatic tires in 1941







1 RCHA About 1936



60-pr Mechanization using Leyland truck



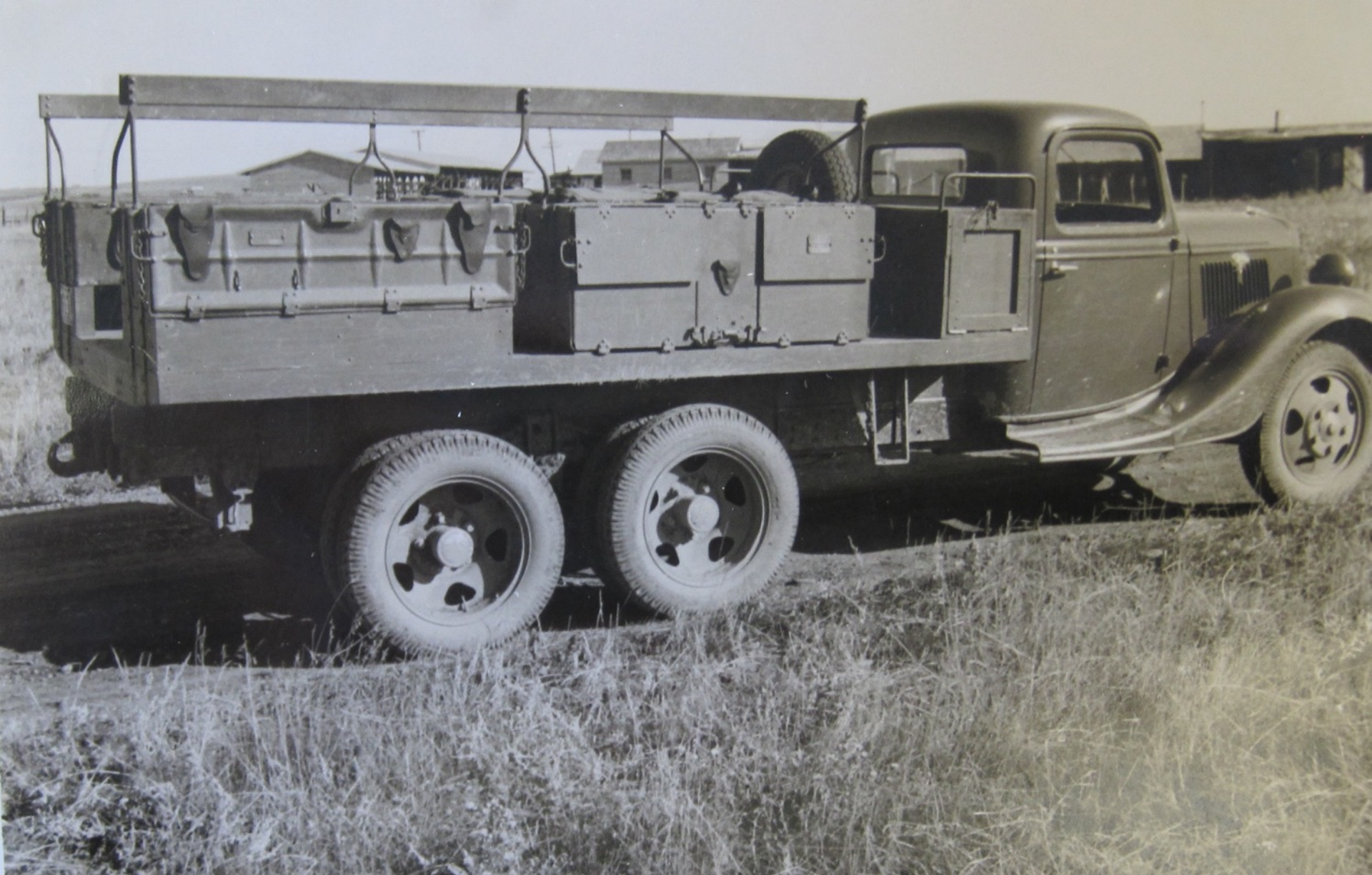


Ford 2-ton with Cunningham half-track conversion.  
The seats are 18-pounder limbers.



Dragon Mk III Trials 1938





Warford Sextette Gun Tractor



Canadian Military Pattern Field Artillery Tractor 1940



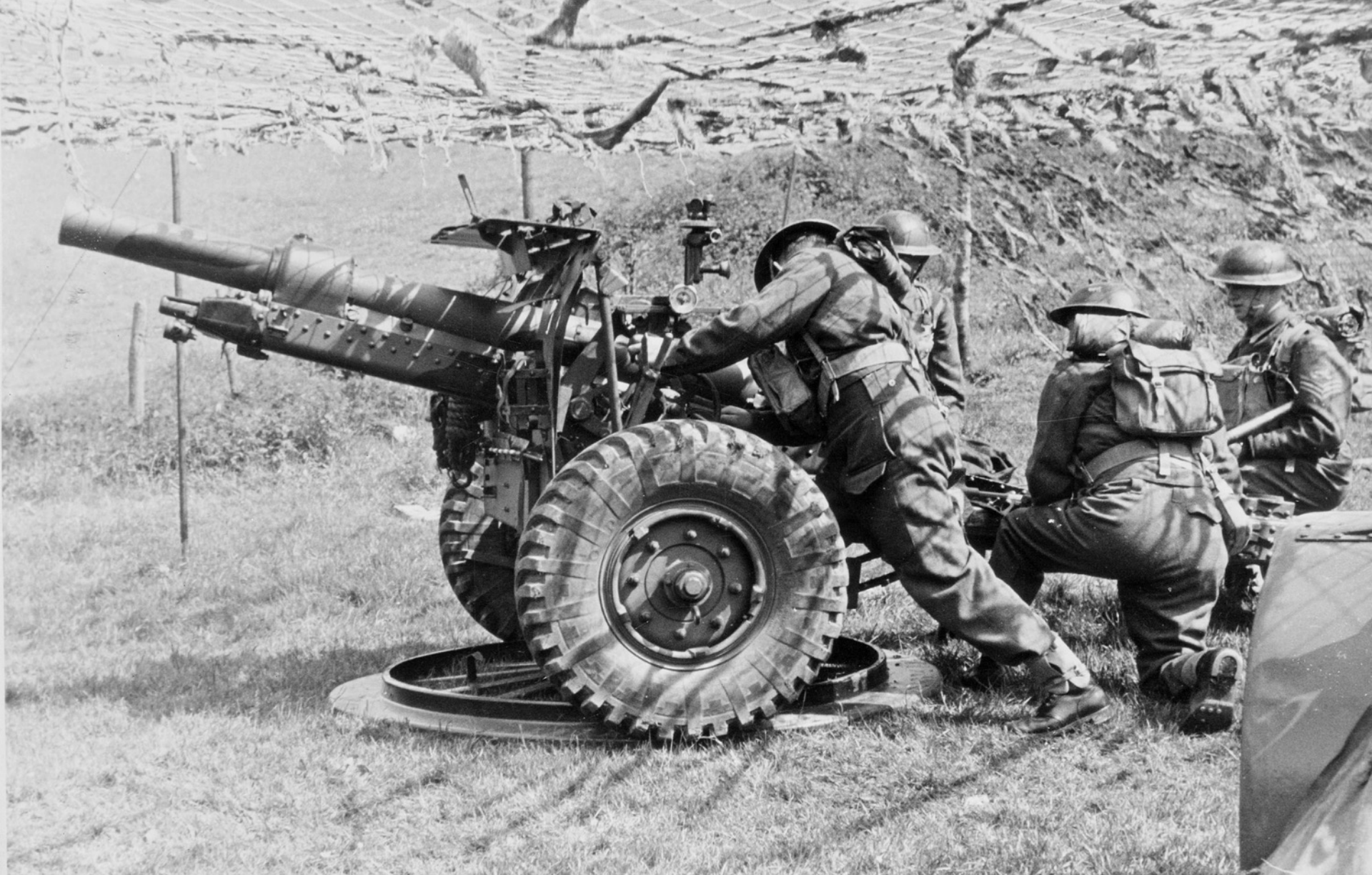
# Second World War Divisional Artillery

Two or Three Field Regiments with 25-pounder Field Guns or Sexton SP Guns (24 guns each)

Anti-tank Regiment with 6-pounder and 17-pounder Anti-tank guns (48 guns)

Light Anti-aircraft Regiment with 20-mm and 40-mm Bofors Anti-aircraft Guns (48 guns)





25-pounder Mk 1 (18/25 pounder) used by 1 RCHA in 1940

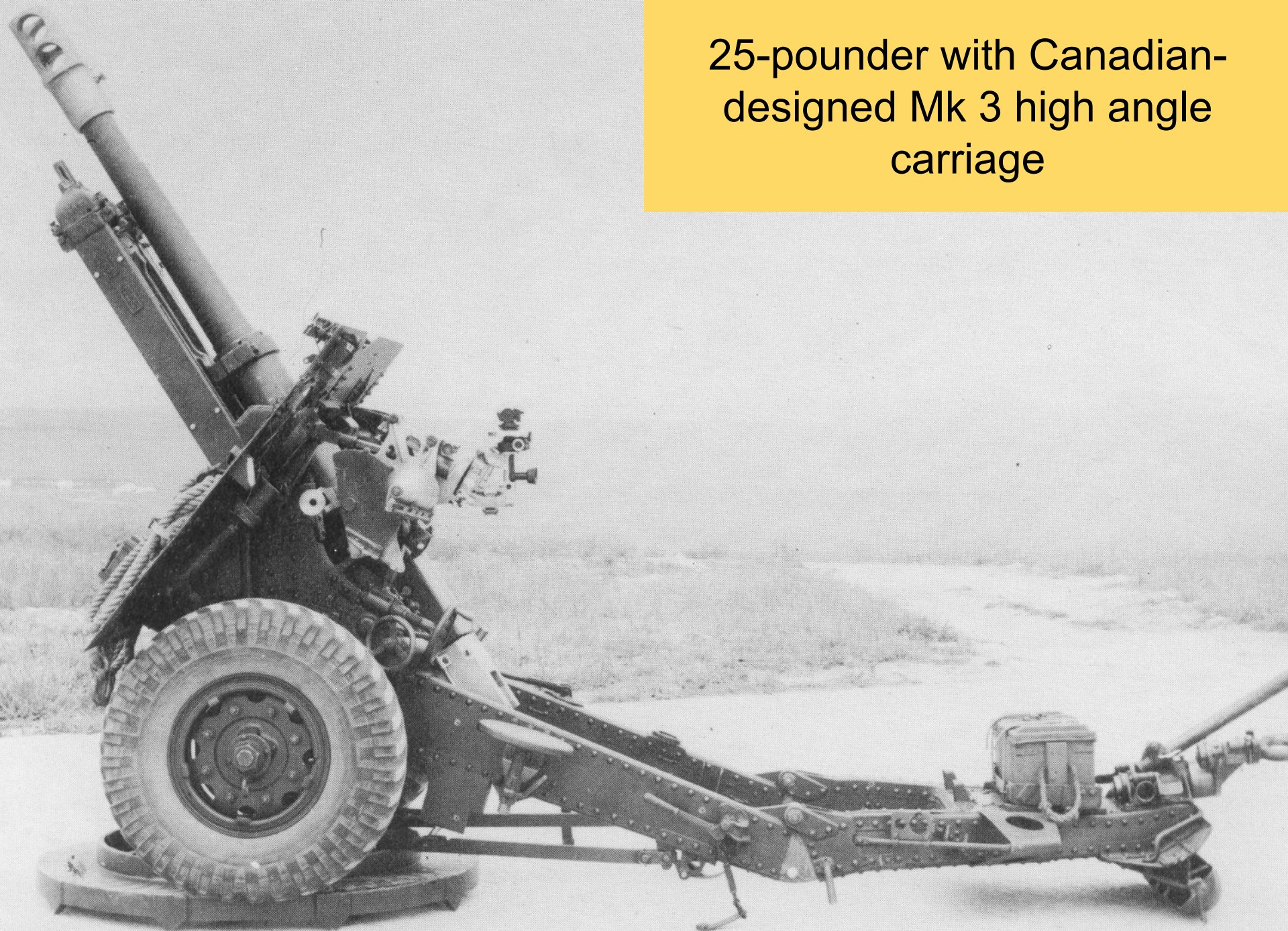




25-pounder Mk II Field Gun and No. 27 Field Artillery Trailer



25-pounder with Canadian-designed Mk 3 high angle carriage







25-pounder Sexton Self-propelled Gun

# Second World War Corps Artillery

Each Corps had an Army Group Royal Artillery (AGRA)  
consisting of:

- Three medium regiments with 16 4.5-inch or 5.5-inch guns

- At least three field regiments (24 guns each)

- A Corps anti-tank regiment (48 guns)

- A Corps light anti-aircraft regiment (48 guns)

- Other regiments as assigned







4.5-inch Medium Gun



5.5-inch Medium Gun



# Second World War Artillery First Canadian Army

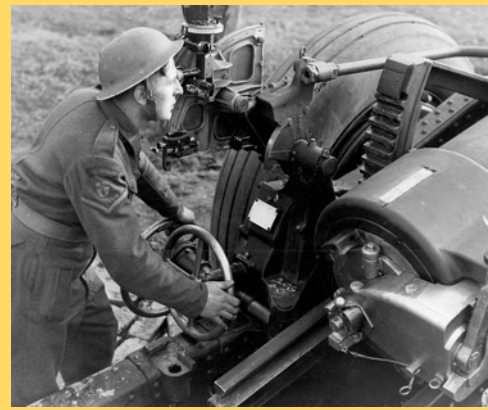
Heavy Anti-aircraft Battery (3.7-inch guns)

Radar Battery

Rocket Battery (Land Mattress)

and

59th Newfoundland Heavy Regiment  
(Royal Artillery)





The Land Mattress (Projector, Rocket, No. 1, Mk I)





7.2-inch Howitzer (59th Newfoundland Heavy Regiment)





155-mm M2 Gun  
(59th Newfoundland Heavy Regiment and Postwar)

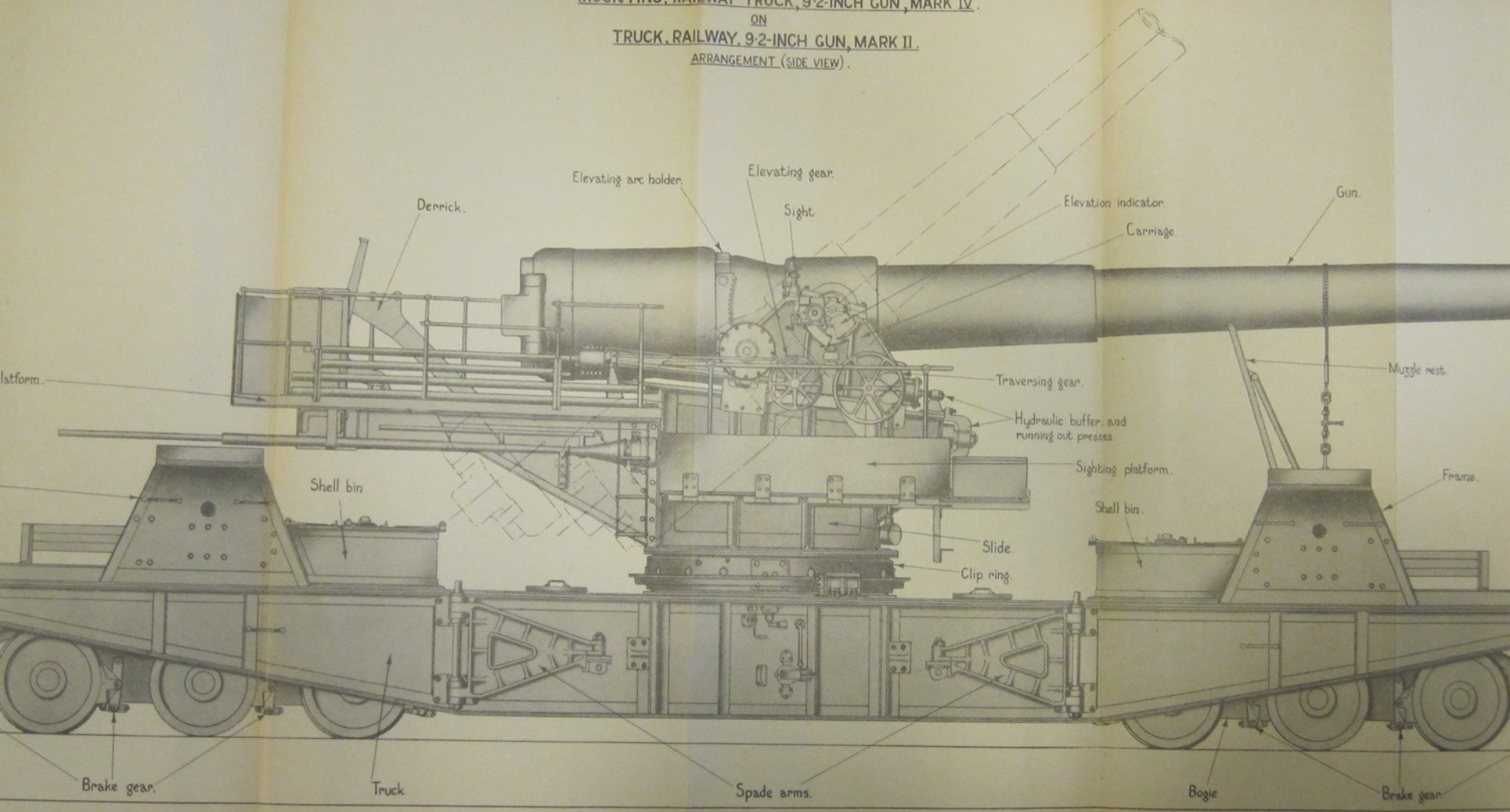


MOUNTING, RAILWAY TRUCK, 9-2-INCH GUN, MARK IV.

ON

TRUCK, RAILWAY, 9-2-INCH GUN, MARK II.

ARRANGEMENT (SIDE VIEW).



## 9.2-inch Railway Guns “X” and “Y” Super-heavy Batteries



Maintaining the Guns  
Second World War



# Second World War Canadian Gun Production

## Sorel Industries

1,684 25-pounders, 2,097 Sextons, 608 Mk XVI\* 4-inch naval guns, 135 Mk 21 naval guns, and more

## Otis Fensom

40-mm Bofors Anti-aircraft guns (27,543 barrels and 2,527 complete guns by 31 March 1944)

## Canadian Westinghouse

3.7-inch Anti-aircraft guns (4,965 barrels and 1,650 mountings by 31 March 1944)

## Dominion Engineering Works

2-pounder (3,129 barrels) and 6-pounder Antitank guns (8,430 barrels and 3,779 carriages by 31 March 1944)

Plus 5.5-inch gun carriages and many naval guns

# The Postwar Era

After the Second World War, the Regiment was well-equipped (790 25-pounders and others)...

Until the decision to convert to American style equipment...

New guns were produced at Sorel Industries

105-mm C1 Howitzers

155-mm C1 Howitzers

And procured for the Airborne Battery

4.2-inch Mortars

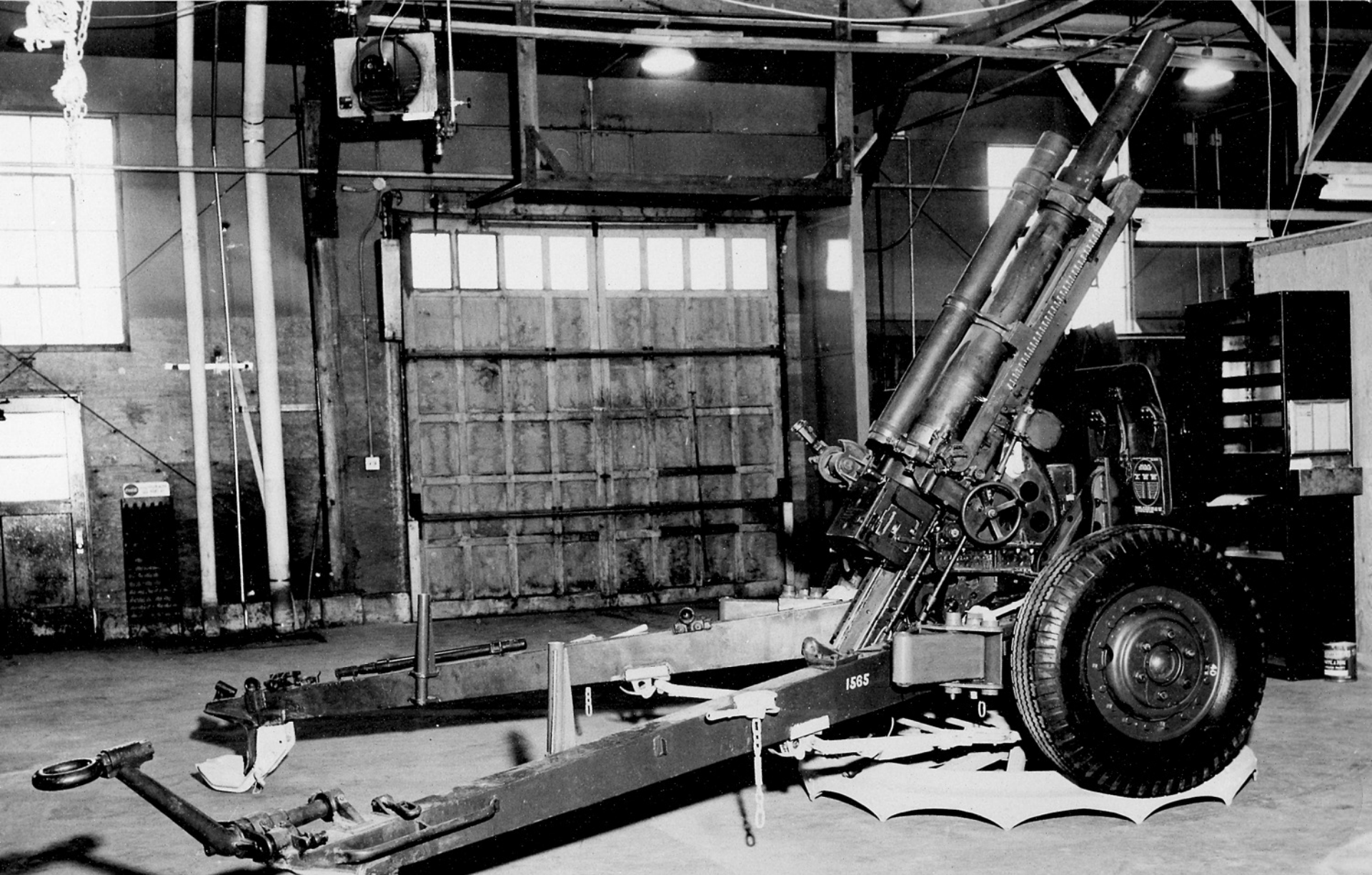
105-mm L5 Howitzers





105-mm C1 Howitzer





Experimental 105-mm C1 howitzer with firing platform





105-mm C1 howitzer with ballistic nylon enclosure





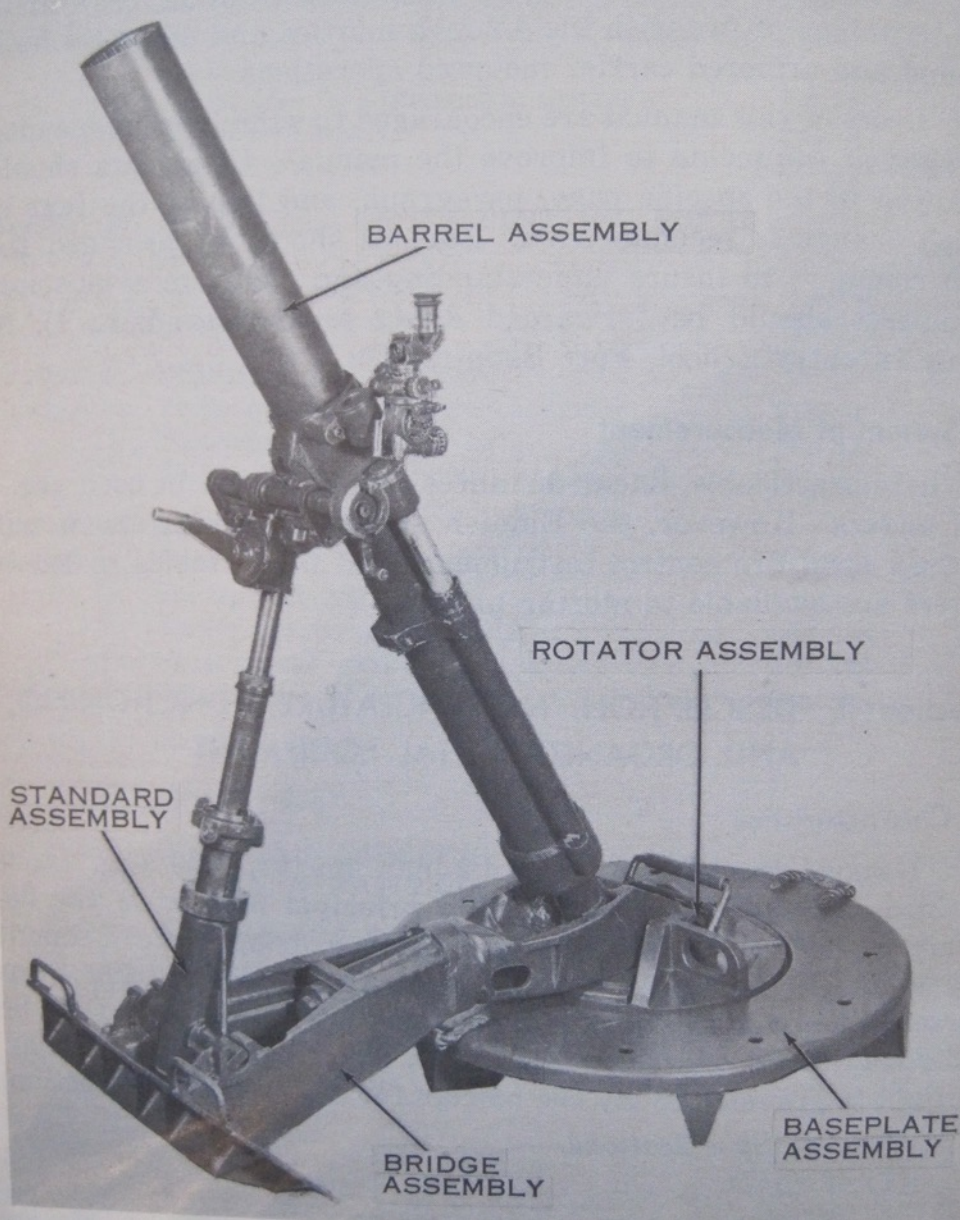
155-mm C1 Howitzer





155-mm C1 Howitzer modified with 39-calibre barrel



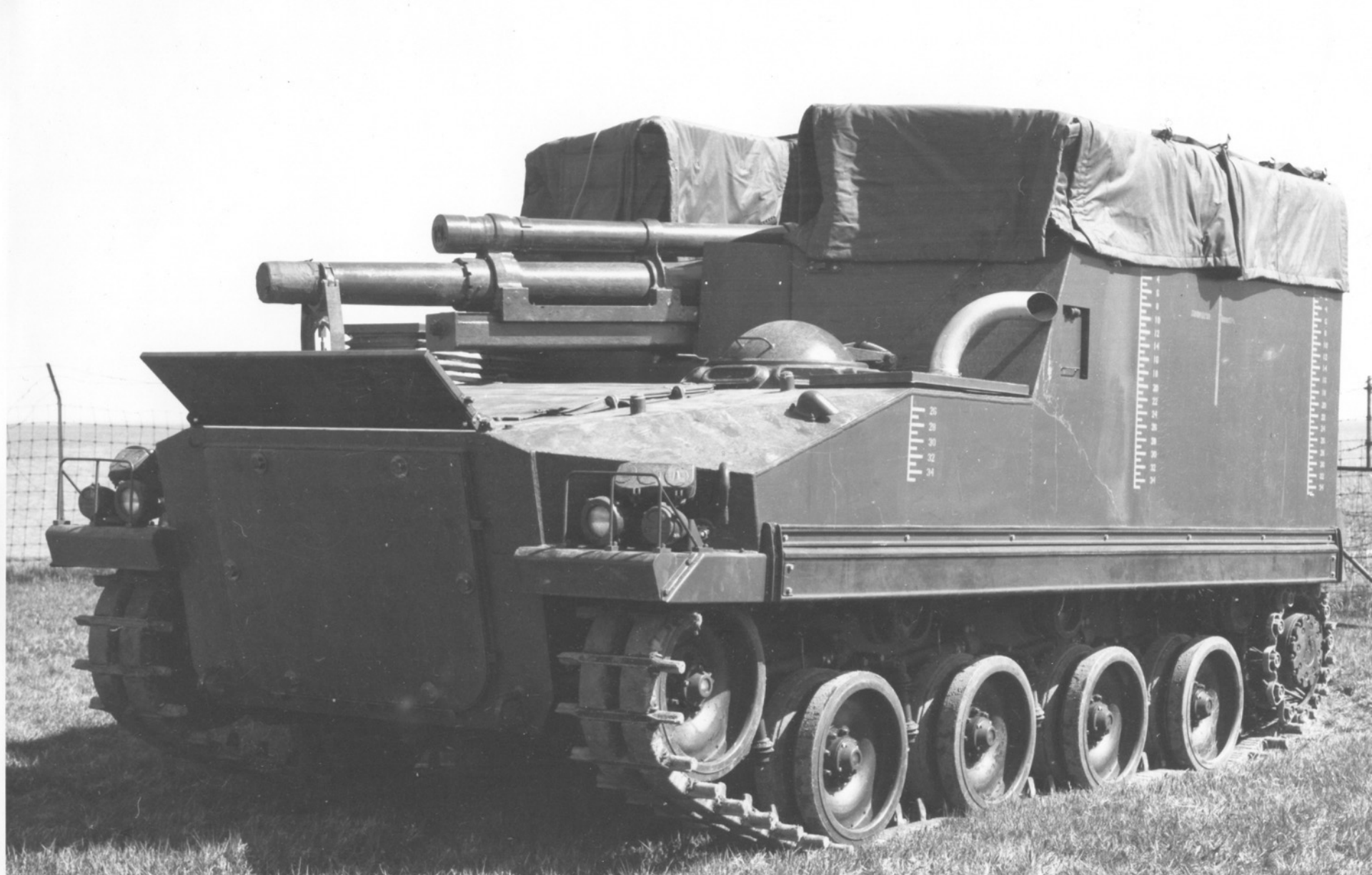


4.2-inch M30 Mortar





105-mm L5 Howitzer



105-mm Bobcat SP Gun



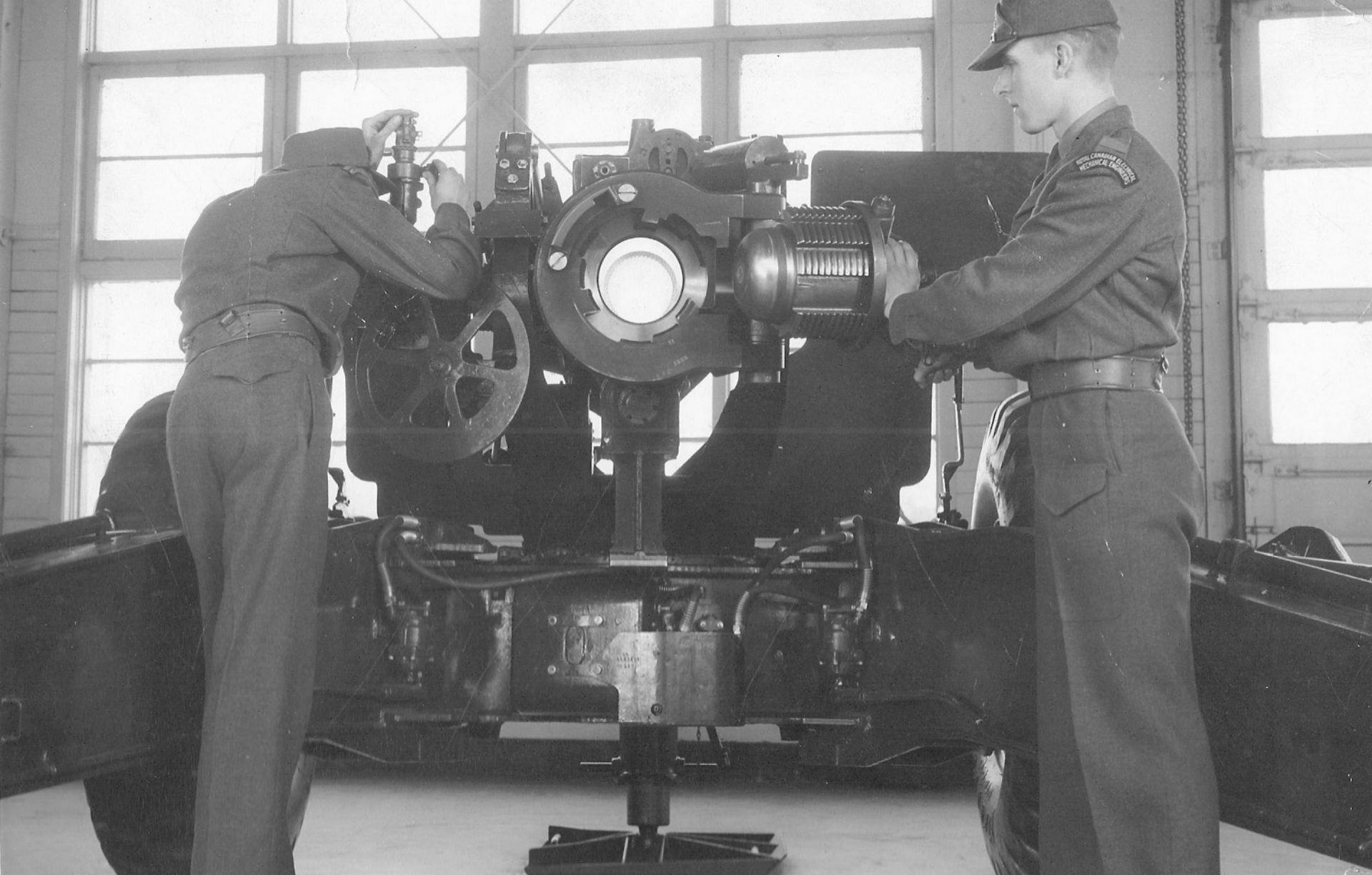


155-mm M109 Howitzer



M109 with the M185 39-calibre barrel





Maintaining the Guns after the Second World War  
Boresighting

# The Twenty-first Century

As The Regiment entered the twenty-first century:

The 105-mm C1 Howitzer was upgraded to the C3 Howitzer

The 155-mm M777 towed gun entered service

The 105-mm LG-1 Howitzer took over the light gun role







105-mm C3 Howitzer





155-mm M777 Howitzer





105-mm LG-1 Howitzer

# Twentieth Century Coast Defence

## The British Standard for a Defended Harbour

9.2-inch guns against long range bombardment by battleships or heavy  
cruisers

6-inch guns for close defence against light cruisers and armed  
merchantmen

4.7-inch QF guns for defence against torpedo boats

12-pounder QF guns to support the examination service, protect  
booms, and defence against light attack craft

Searchlights and mobile armament (field guns manned by coast  
artillery)

In 1905, Canada took over the fortresses at Halifax and  
Esquimalt from the British



# Canada had five defended ports in the First World War

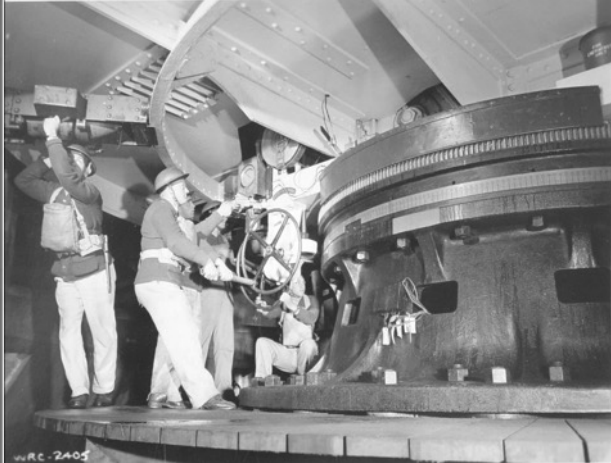
Halifax (3 - 9.2-inch; 10 - 6-inch; 5 - 4.7-inch; 12-pr)

Sydney, NS (2 - 6-inch; 2 - 4.7-inch)

Saint John, NB (2 - 4.7-inch)

Québec City (2 - 7.5-inch; 2 - 6-inch; 2 - 12-pr)

Esquimalt (2 - 9.2-inch, 6 - (old) 6-inch)



9.2-inch Mk X Coast Defence Gun on Mk V Mounting





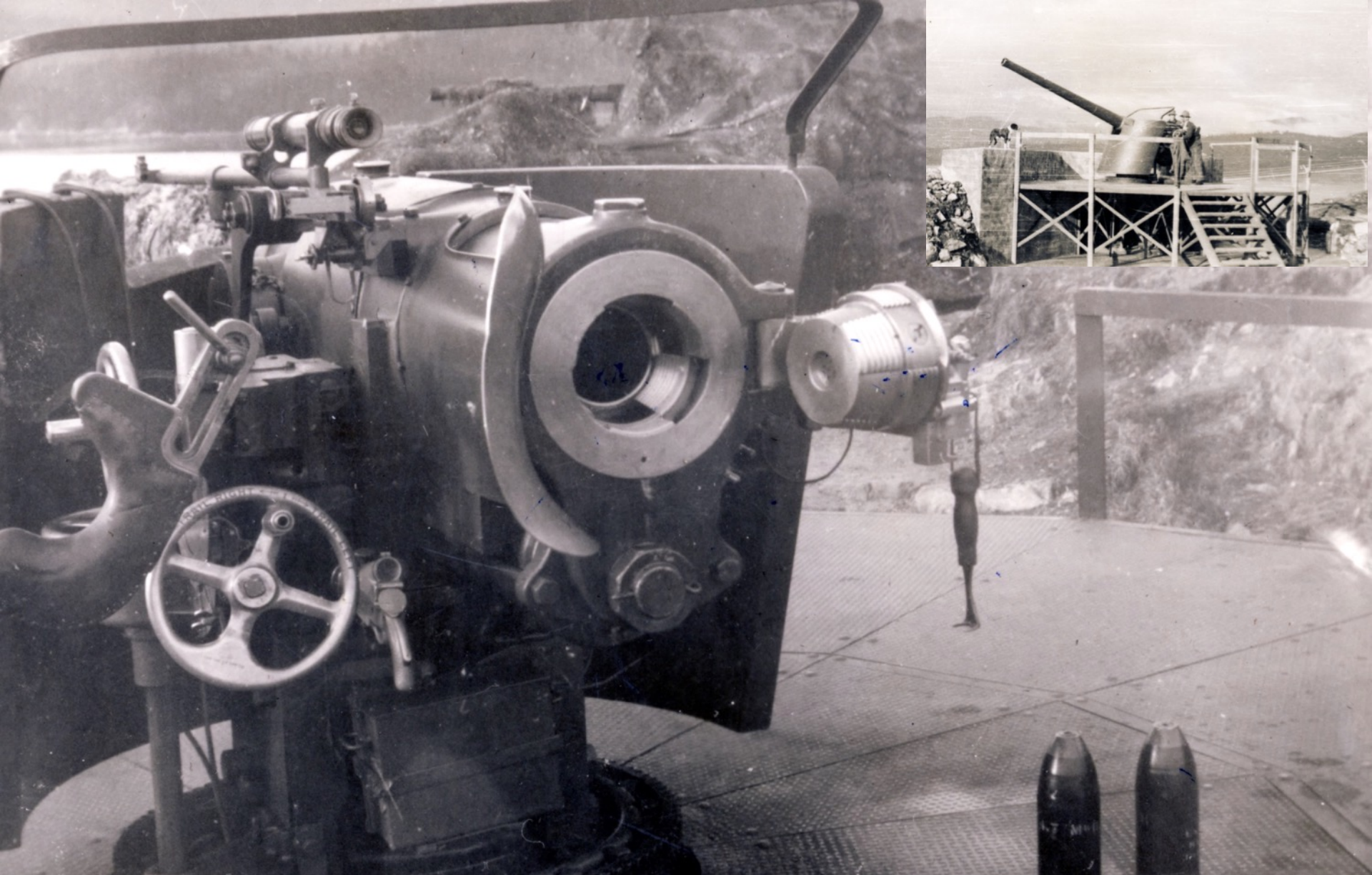
7.5-inch Coast Defence Guns At Québec



6-inch Mk VII Coast Defence gun

100 lb shell; 12,000 yd





4.7-inch Coast Defence Gun



12-pounder 12-cwt Coast Defence gun





6-pounder 8-cwt Hotchkiss Coast Defence Gun  
The Examination Service Enforcer

In the Second World War, Canada had fourteen defended ports. More guns were needed.

New guns purchased from Britain

Guns manufactured and modified in Canada

Guns from the Royal Canadian Navy

Guns from the Royal Navy

Guns from the American Army





American Lend-Lease 10-inch guns at St. Johns and Wiseman Cove, Nfld; Gaspe, Que; and Shelburne, NS





9.2-inch Mk X gun on Canadian-manufactured Mk CVIa 30° Mounting  
Albert Head, Esquimalt





New 9.2-inch Mk XV Guns on Mk IX 35° Barbette Mounting  
at Oxford Bty, Sydney



New 9.2-inch Mk X Coast Defence Guns on Mk VII Mounting  
at Devils Battery, Halifax





US 8-inch M1888 Gun

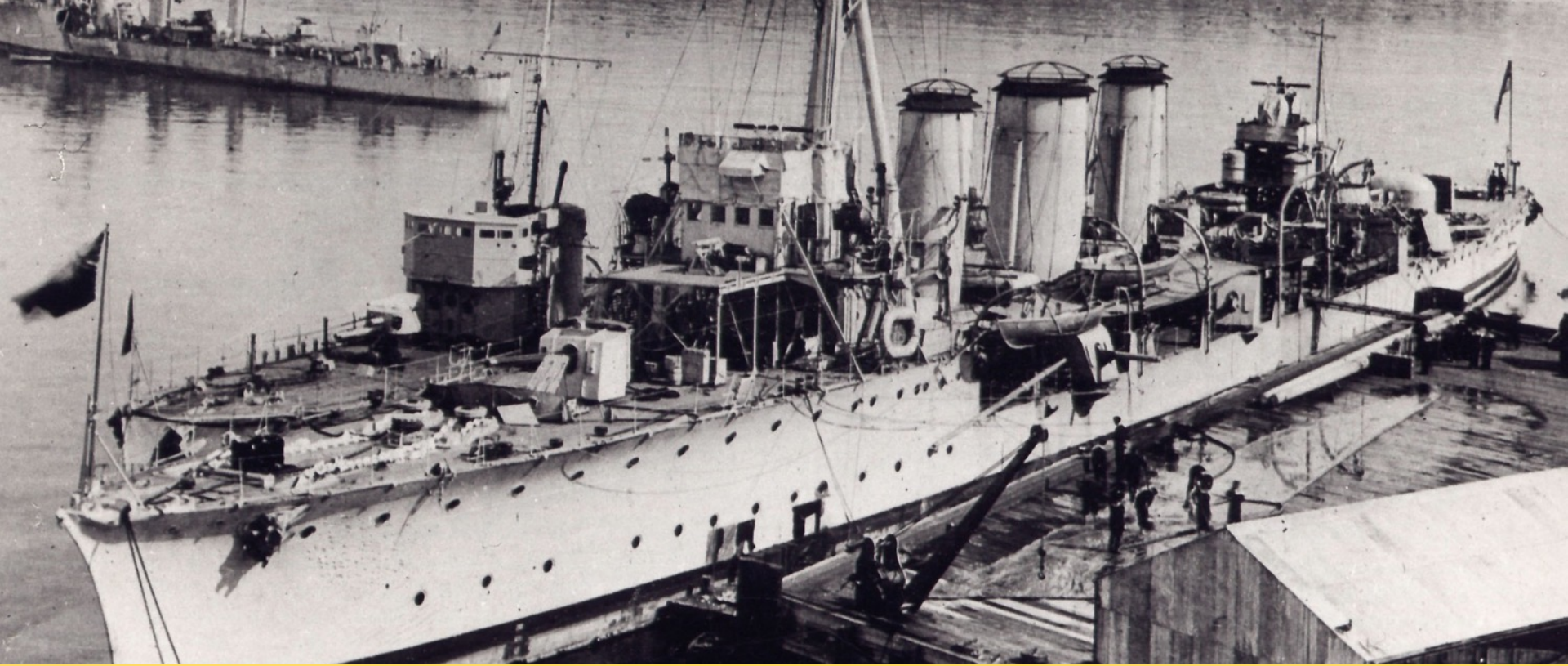
on M1918 Barbette Mounting on M1918 Railway Carriage.

This type of gun was installed at Christopher Point and Prince Rupert, BC.



7.5-inch guns from Royal Navy Hawkins Class Cruiser  
at Mispec Point, Saint John, NB





HMCS Aurora was scrapped in the 1920s, but contributed two 6-inch guns at Prince Rupert; five 4-inch guns at Canso Strait and in training centres; and one 4-inch high angle anti-aircraft gun at Sydney, NS





6-inch Mk 24 Coast Defence Gun at Mary Hill, Victoria, BC,  
and also at Halifax, NS, and Prince Rupert, BC





Canadian-manufactured 4-inch Mk XVI\* guns on twin Mk XIX mountings replaced the 4.7-inch guns





6-pounder 10-cwt twin Coast Defence Gun





CD and CDX Radars

Depression Rangefinder



Coast Defence Fire Control



Optical Rangefinder

# The Anti-tank Guns

The RCA took over antitank defence in 1938

2-pounder Antitank Gun

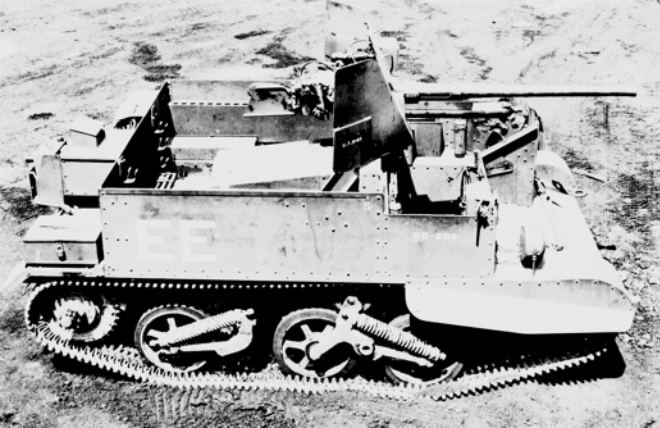
6-pounder Antitank Gun

17-pounder Antitank Gun

M-10 and Archer SP Antitank Guns







1939 - 2-pounder Anti-Tank Gun





1941 - 6-pounder 7-cwt Anti-tank Gun





1943 - 17-pounder Anti-tank gun





17-pounder self-propelled anti-tank gun “Archer”





17-pounder self-propelled anti-tank gun M10 "Achilles"

# Countering the Aircraft

Lewis, Bren, and Twin 0.50-calibre Machine Guns

20-mm cannon (single and quadruple mountings)

13-pounder 9-cwt Anti-aircraft Gun

3-inch 20-cwt Anti-aircraft Gun

3.7-inch Anti-aircraft Gun

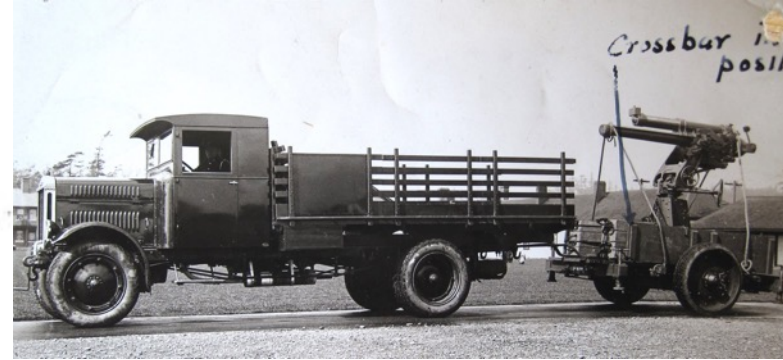
40-mm Anti-aircraft Gun (Towed and Boffin)

90-mm Anti-aircraft Gun

Blowpipe, Javelin, and Skyguard





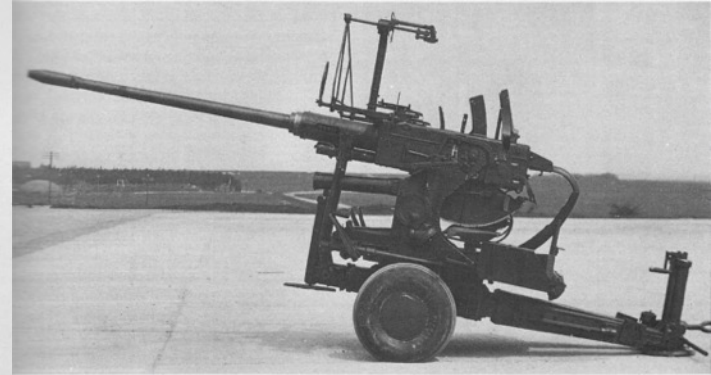


13-pounder 9-cwt Anti-aircraft Gun  
Used by "E" Battery in the First World War, and up to 1942



3-inch 20-cwt Anti-aircraft Gun 1937-1943





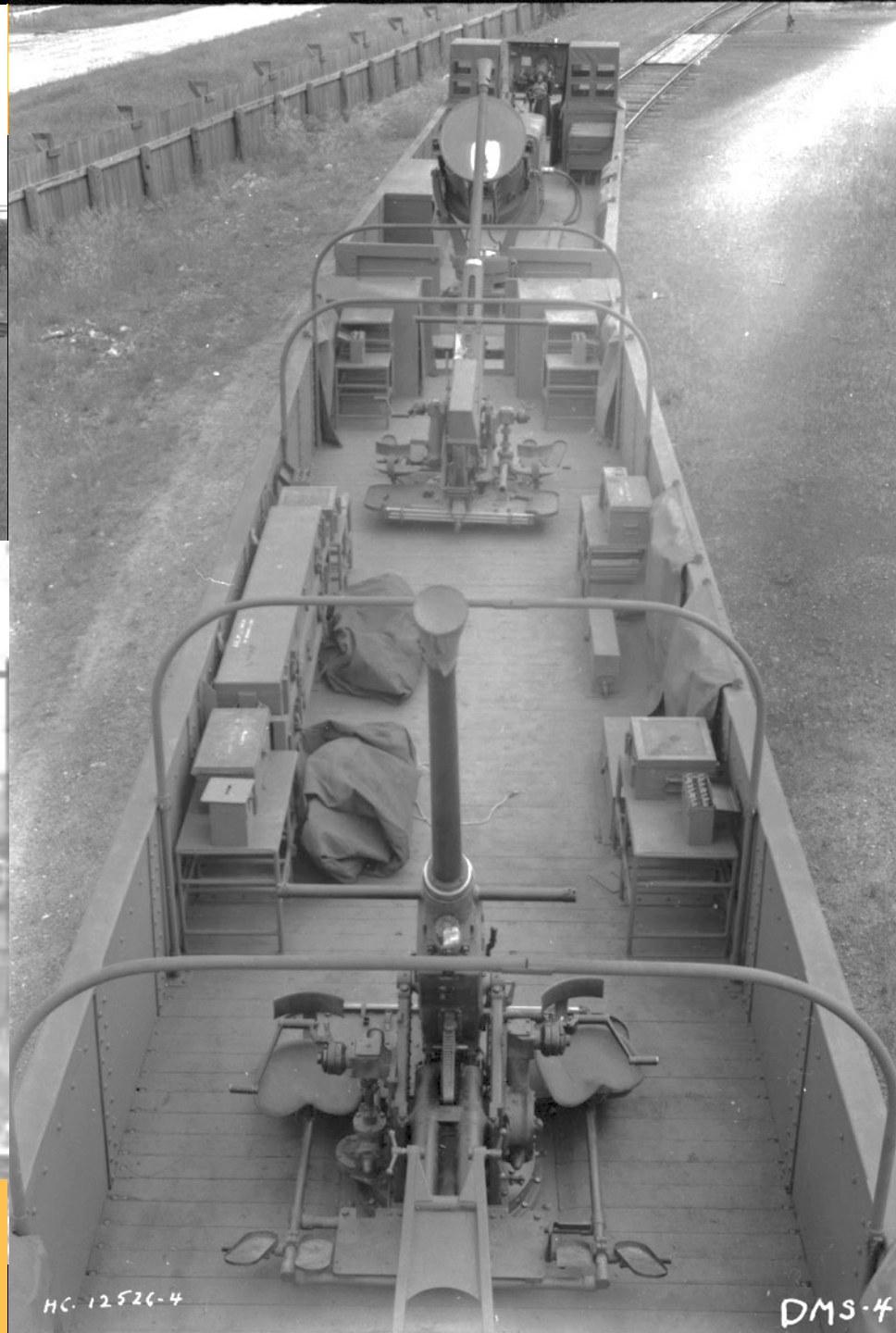
40-mm Bofors Anti-aircraft Gun





40-mm Boffin Anti-aircraft Gun





The Armoured Train

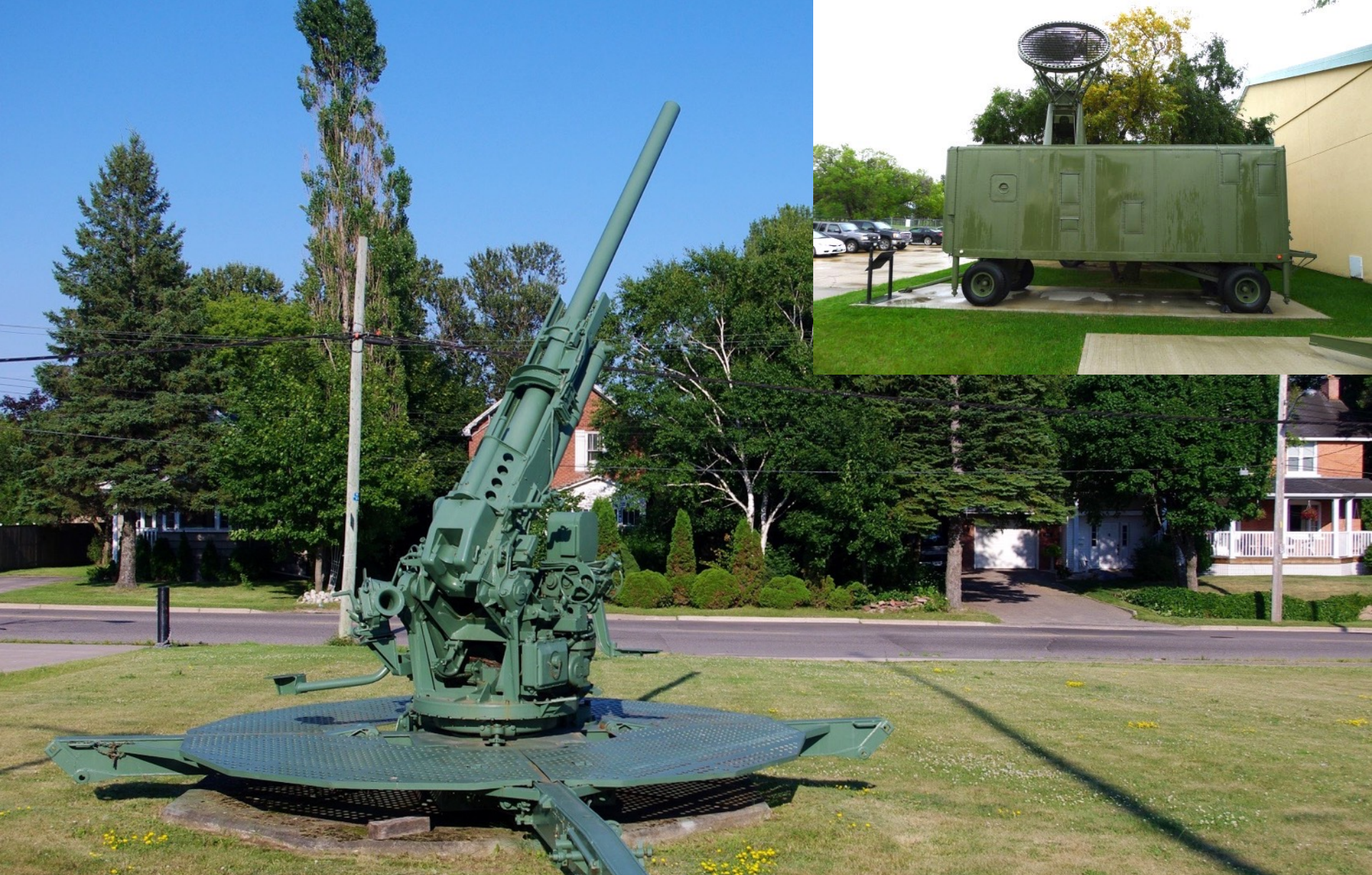
HC 12526-4

DMS-4



3.7-inch Antiaircraft Gun





90-mm Antiaircraft Gun and M242 Radar





ADATS





Blowpipe and Javelin  
Very Short Range Anti-aircraft Missiles





35-mm Twin Oerlikon Cannon and Skyguard Fire Control System





And, in a category by itself,  
The Honest John Rocket

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